1885

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PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT

IRRIGATION BRANCH,

FOR

THE MONTH OF JULY 1885.

Printed by Authority.

MADRAS:
PRINTED BY E. KEYS, AT THE GOVERNMENT PRESS.
1885.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

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PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT,

FOR THE MONTH OF JULY 1885.

Irrigation.
Account.

READ—the following papers :—

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Masulipatam, 12th February 1885, No. 2596 K.S.

I have the honor to forward, herewith, for your approval and the sanction of Government, a revised estimate for completing the Masulipatam canal, Kistna Eastern section.

2. A list of the accompaniments is attached.

ENCLOSURES.

REPORT on revised estimate of Rs. 3,24,859 for widening and completing the Masulipatam canal, Kistna Eastern division.

The details of the fall and discharge are given in the Executive Engineer's report accompanying. I have, however, increased the rate allowed for earthwork to admit of the earth being disposed on the existing banks, instead of on the berms as was by the Executive Engineer intended; and I have added an item for stone drains down the slopes in the upper part of the canal where the side slopes are long. There was no provision in the original estimate for removing trees. The principal excess occurs on these items.

2. Under Miscellaneous, provision has been made for five cattle-crossings at the undermentioned villages—

1. Mogalarajapuram.
2. Yenamalacuduru.
3. Vallur slope.
4. Kanakavalli.
5. Inampudi.

3. The provision in the original estimate for reconstructing the Nidamole lock has been retained, though I believe this reconstruction will not ultimately be found to be required when the left chamber wall is reconstructed of the same section as the right wall which was rebuilt last year. It may, however, be better to retain the item till this reconstruction has been carried out and the result seen.

4. The sum of Rs. 12,000 allowed in the original estimate for improving the canal below Kankipad has been struck out by me. The Executive Engineer retained it, but states that probably it will not be all wanted. The greater part of the work which this item was intended to provide for has been done from silt clearances during the nine years which has elapsed since the original estimate was prepared, and the rest of the work will be completed in the same way in a few years more. The raising of the banks by these silt clearances is much the best way of completing the work, and this item can be safely omitted.

5. The sum of Rs. 10,537 will be required to be allotted from unforeseen works, if the Rs. 25,330 provided for reconstructing the Nidamole lock is allowed to remain. If this be struck out, Rs. 14,793 can be credited to unforeseen works.

6. With these remarks, the revised estimate is recommended for sanction.

Masulipatam,
12th February 1885.

(Signed) J. W. RUNDALL,
Superintending Engineer, II Circle.

Report to accompany the estimate of Rs. 3,24,859 for improving the Masulipatam canal.

The canal as it exists at present can supply only the area of cultivation below Kankipad, and to meet the demand for water under the projected Bank canal, an estimate of Rs. 10,70,315 was prepared and sanctioned by Government in G.O., No, 3528, of 22nd December 1876.

2. This estimate provided a bed width of 100 feet at head, increased to 115 feet as far as the head of the Bank canal, and thereafter as far as Kankipad lock a bed width of 61 feet increasing to 76 feet.

3. Recent levels have shown that the fall between the main canal head-sluice floor and the upper sill of Kankipad lock is 2·60′, not 2·0 as previously supposed; and for this and other reasons, a revision of the estimate became necessary.

4. The main canal of the eastern delta system extends from the head-sluice for 5 furlongs, throwing off the Ellore canal, Ryves' canal, and finally the Masulipatam canal, the total acreage to be supplied by the latter being 127,500 acres requiring a discharge per second of 1721·5 cubic feet at the rate of 1·8 cubic yards per hour per acre.

5. At 4½ miles from the head-sluice the Bank canal takes off, and as it is intended to cultivate under it 60,000 acres, below its off-take the Masulipatam canal will carry water only for 67,500 acres, or 911·25 cubic feet per second.

6. The level of the head-sluice floor being taken at 39·04, and that of Kankipad lock upper sill as 36·44, there is a fall of 2·60 over a total distance of 12 miles 5 furlongs. Of this distance of 12 miles 5 furlongs, 5 furlongs may be taken as the main canal with no appreciable fall; so that the fall of 2·60 is spread over a length of 12 miles.

7. A convenient working depth at the head will be 8·00, and at Kankipad lock 7·00 depth is suitable; this gives a surface fall of (39·04 + 8) — (36·40 + 7·0) = 47·04 — 43·40 = 3·64′ in 12 miles, or about ·30 per mile.

8. Owing to the large quantity of water to be taken off by the Bank canal it is not possible to carry the bed fall with a uniform fall throughout, and it is proposed to arrange it as follows.

9. Starting from the head of the Masulipatam canal with bed at 39·04 and surface at 47·04 the bed will have a fall of ·33 per mile up to 4½ miles the off-take of the Bank canal; this fall with a bed width of 107′-0 and side slopes of 1½ to 1 gives a discharge of 1719·3, against 1721·25 cubic feet per second theoretically necessary.

10. At the off-take of the Bank canal it is intended to raise the bed of the canal ·5 by means of a pitched floor, making, its level 38·26 and starting with a depth of 7·5 to carry it on to Kankipad with a bed fall of 0·29 per mile bed width of 67·0 and side slopes 1½ to 1; this canal will discharge 915·52 cubic feet per second, against a theoretically necessary discharge of 911·25.

11. Below Kankipad a few works are necessary; these have been entered either from the sanctioned estimate or from the actual cost of construction.

12. The item of Rs. 11,436 for earthwork below Kankipad has also been retained though it will probably not be entirely required.

13. The item of Rs. 25,330 is for a new lock at Nidamole, but it is hoped that this costly work may not be necessary if the repairs to the old lock prove stable.

14. The rate for earthwork in the first reach is that allowed in the original estimate; the work could probably be done for less if carried out immediately, but looking to the fact that the bulk of the work may not be carried out for some years, and that rates are steadily rising, it has not been thought safe to make any reduction.

Bezváda,
17th January 1885.

(Signed) J. D. GRANT,
Exec. Engr., Eastern Division, Kistna.

No. 119 I.

Submitted to Government.

2. The differences between the original estimate of Rs. 3,14,322, included in proceedings of Madras Government, No. 691 I., dated 30th July 1884, and the

revised estimate, amounting to Rs. 3,24,859, now submitted by the Superintending Engineer, for completing the Masulipatam canal, in the Kistna Eastern division, are shown below:—

Item No.	Sub-head.	Name of Work.	Original Estimate.	Revised Estimate.	Increase.	Saving.
			RS.	RS.	RS.	RS.
1.	F. (1) Other cross drainage works.	Sultanagaram under-tunnel improvements.	...	912	912	...
2.	I. Navigation.	Improving canal below Kankipad.	12,000	...	...	12,000
3.	Do. ...	Chintaguntapalem bridge, raising.	400	275	...	125
4.	Do. ...	Boat basin improvements.		660	660	...
5.	L. Earthwork	Improving and widening canal.	1,22,580	} 1,85,190	10,530	...
6.	Do. ...	Do.	52,080			
7.	Do. ...	Stubbing trees ...	...	5,000	5,000	...
8.	Do. ...	Sixty stone drains ...	...	1,140	1,140	...
9.	O. Miscellaneous.	Five cattle-crossings ...	...	4420	4,420	...
		Total ...	1,87,060	1,97,597	22,662	12,125

3. The saving on item No. 2 is due to the provision made in the original estimate not being required, owing to the greater part of the work intended to be carried out having already been executed from the grant for Revenue Maintenance and Repairs during the past nine years.

4. It is recommended that sanction be accorded to the revised estimates, amounting to Rs. 1,97,597 only, as no object will be gained in resanctioning items aggregating Rs. 1,27,262 of the original estimate for which detailed estimates have already been sanctioned, and on which no expenditure will, it is anticipated, be incurred in excess of the amounts previously sanctioned.

Ootacamund, (Signed) J. O. HASTED, Colonel, R.E.,
22nd June 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 1st July 1885, No. 575 I., Public Works.

The revised estimates, amounting to Rs. 1,97,597, for completing the Masulipatam canal, in the Kistna Eastern division, are sanctioned in supersession of the provision of Rs. 1,87,060 made for the works in the estimate printed in proceedings of Madras Government, No. 691 I., dated 30th July 1884, the excess of Rs. 10,537 being met from the balance of the lump sum provided in the delta completion estimates for unforeseen works, which will then be reduced to Rs. 2,49,251.

2. This sanction has been registered as No. 79 I. of 1885-86, and classified as shown below:—

N. Productive Public Works.
Capital Account.
51. Irrigation and Navigation.
Kistna Delta System.
Eastern Section.
I. Works.
(2) Main Canals and Branches.
Masulipatam Canal.

		RS.
F (1). Other cross drainage works.	1. Sultanagaram under-tunnel improvements.	912
I. Navigation	2. Chintaguntapallem bridge raising.	275
Do.	3. Boat basin improvements ...	660
L. Earthwork	4. Improving and widening canal.	1,85,190
Do.	5. Sixty stone drains	1,140
Do.	6. Stubbing trees	5,000
O. Miscellaneous ...	7. Five cattle-crossings ...	4,420
	Total, Estimate ...	1,97,597

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts, with abstract estimate.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 1st.

Recd. *Encl.*

G.O., 1st July 1885, No. 575 I.

JULY.

Masulipatam Canal

Revised estimates for completing the — in the Kistna Eastern division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Masulipatam, 11th June 1885, No. 250 S.G.

I have the honor, as directed in G.O., No. 453 I., of the 16th ultimo, to forward a revised schedule A for the Sangam project for 1885-86, together with a copy of letter from the Executive Engineer sending in this revised schedule.

2. It will be seen that Mr. Malet says he cannot, without the prospect of serious loss, either in further expenditure on the works or in revenue to be derived from them, do with less than the sum for which he has prepared the schedule, and which is Rs. 29,551 on works, and Rs. 11,397 on establishment, in excess of the reduced grant.

3. Mr. Malet should, I consider, have made out the schedule to correspond with the sum allotted for the project, and then have stated the sum which he required on each item over and above what the reduced grant permits.

4. I quite agree, however, with the Executive Engineer in considering that, if it is by any means possible, the whole sum now asked for should be given.

5. It is to be remembered that the money hitherto spent on the Sangam project has been on the anicut, the main canal, main reservoir, and main distributaries; the work proposed this year consisted in the completion of the anicut, of the main reservoir, and of the excavation of minor distributaries. Unless the work proposed for the current year, or the bulk of it, is carried out, the previous expenditure must remain unproductive, and works which we are pledged to the ryots to carry out have to be postponed. The financial prospect of the works will, moreover, be seriously damaged, and all for want of a few thousand rupees which the staff now on the works can spend in a short time. I beg to recommend that a special appeal be made to the Government of India to allot the Rs. 41,000 which Mr. Malet's schedule shows to be the least sum which is needed for the current year.

6. Please inform me by wire whether we can proceed on the assumption that this schedule will be accepted.

ENCLOSURES.

SANGAM PROJECT DIVISION—II CIRCLE.

REVISED Schedule A, showing the Component Works of the Budget Items for the Year 1885-86.

Item.	Main Head.	Name of Canal.	Sub-head.	Individual Work.	Amount of Estimate.	Outlay. To end of 1883-84.	Outlay. Probable during 1884-85.	Grant for 1885-86.	Item Total.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS. CAPITAL ACCOUNT. 51. IRRIGATION AND NAVIGATION. *Sangam Anicut System.*	RS.	RS.	RS.	RS.	RS.
	(1) Head Works.	...	C. Works ...	Anicut	4,73,370	2,63,487	1,21,181	55,000	
			O. Miscellaneous.	Sundries	17,170	12,179	1,874	2,000	
				Repairing damages caused by floods to the double row of wells under the Sangam anicut body-wall	17,155	...	16,377	700	
			P. Maintenance.	Maintenance of temporary buildings for 1885-86	...	...	...	1,500	
			K. Buildings ...	Purchase of additions made by Captain Campbell to the Executive Engineer's house at Sangam	...	...	...	1,000	60,200
	(2) Main Canals and Branches.	Kanigiri Canal.	B. Land ...	Compensation for land for Kanigiri reservoir	1,89,500	12,980	65,197	54,852	
			E. Falls and Weirs.	Fall at 4th mile, Kanigiri canal ...	25,000	21,139	2,163	1,600	
			L. Earthwork ...	Kanigiri canal excavation and banking.	2,14,536	1,53,191	57,270	4,000	
				Dornal road diversion, Kanigiri canal.	...	...	...	6,000	
				Kanigiri reservoir.					
			N. Tanks and Reservoirs.	Earthwork revetment, &c.	2,17,562	1,25,675	31,100	32,050	
				Rock cutting	523	...	...	500	
				Demolishing two sluices	900	...	...	900	
				Demolishing two calingulahs	400	...	...	400	
				Roughstone masonry dam on east of southern head-sluice, &c.	9,480	...	5,459	2,000	

		O. Miscellaneous.	Sundries	10,334	5,820	3,813	300	1,02,602
	Duvur Canal.	N. Tanks and Reservoir.	Duvur reservoir improvements	8,520	863	6,128	1,500	1,500
			First Section.					
(3) Distributaries.	Eastern Channel.	C. Works ...	Head-sluice	26,912	14,760	7,990	4,000	
			Drainage culvert, 1st mile	3,720	150	2,103	1,500	
			Do. do. 3rd mile	2,940	230	2,005	700	
			Bridge, 2nd mile	6,555	990	4,106	1,500	
			2 Inlets ... { Inlet at 1·45 chains ...	540	142	232	200	
			Do. at 2·5 chains ...	315	93	171	50	
			4 Falls in 5th mile. { No. 1	4,890	2,925	1,820	100	
			No. 2	4,800	2,164	2,121	500	
			No. 3	4,800	2,167	1,999	700	
			No. 4	4,800	2,527	1,876	400	
			Syphon culvert, 6 miles	...	...	...	6,000	
			7 Irrigation sluices	3,500	749	2,219	550	
		L. Earthwork ...	Excavation and banking	77,500	45,264	26,368	5,000	
		P. Maintenance.	Restoration of damages in first 6 miles.	2,170	...	1,295	1,000	
			Second Section.					
		B. Land ...	Compensation for land	3,650	...	...	3,600	
		C. Works ...	Road culvert, 7th mile	3,750	...	...	500	
			Bridge at 8 miles 6 furlongs	4,240	...	...	1,200	
			Drop and bridge at 9 miles 8 furlongs.	4,820	...	...	1,200	
			Drainage culvert at 9 miles 3,300 feet.	3,300	...	...	800	
		L. Earthwork ...	Excavation and banking	42,000	...	1,600	10,000	
			Minor Irrigation Channels.					
			No. 1 minor channel at 0 mile 5 chains.					
		C. Works ...	Cistern and bridge	729	...	...	705	
		L. Earthwork ...	Embanking to channel	46	...	...	45	
			No. 2 minor channel at 0 mile 5 chains.					
		B. Land ...	Compensation for land	50	...	...	50	
		L. Earthwork ...	Excavation	418	...	...	400	
			No. 3 minor channel at 1st mile-stone.					
		B. Land ...	Compensation for land	50	...	...	50	
		C. Works ...	Sluice at 1st mile-stone	430	...	...	400	
		L. Earthwork ...	Excavation	470	...	...	450	

Revised Schedule A, showing the Component Works of the Budget Items for the Year 1885-86—*cont.*

Item.	Main Head.	Name of Canal.	Sub-head.	Individual Work.	Amount of Estimate.	Outlay. To end of 1883-84.	Outlay. Probable during 1884-85.	Grant for 1885-86.	Item Total.
					RS.	RS.	RS.	RS.	RS.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS.					
				CAPITAL ACCOUNT—*cont.*					
				51. IRRIGATION AND NAVIGATION—*cont.*					
				Sangam Anicut System—cont.					
				No. 4 minor channel at 1 mile 54 chains.					
	(3) Distributaries—*cont.*	Eastern channel—*cont.*	B. Land ...	Compensation for land	50	...	...	50	
			L. Earthwork ...	Excavation	335	...	...	300	41,950
		Elliapolem branch channel.	B. Land ...	Compensation for land	105	...	...	100	
			C. Works ...	Regulating sluice	750	81	438	200	
				Drainage culvert	1,115	...	722	400	
				Inlet	190	...	87	100	
				One drop	410	...	237	150	
				One drop and bridge	1,103	34	523	550	
				3 Irrigation sluices	600	...	256	350	
			L. Earthwork ...	Excavation and banking	4,540	855	2,034	1,500	
				3 Distribution channels	210	...	...	200	3,550
		Allúr channel.	Works ...	Head-sluice	7,130	...	104	7,000	
				Alterations to Pyderu weir	737	...	54	700	7,700
		Allúr branch channel.	B. Land ...	Compensation for land	991	...	266	700	
			C. Works ...	Regulating sluice	3,760	150	2,078	1,500	
				2 Falls in the 1st and 2nd miles ...	6,000	200	3,823	2,000	
			L. Earthwork ...	Excavation and banking 1-14 miles ...	9,500	86	7,057	2,000	6,200

	Southern channel.	B. Land ...	Compensation for land	7,218	181	4,538	2,450	
		C. Works ...	Bridge at 10-11 feet	4,720	...	4,570	150	
			Drainage culvert at 1,285 feet	4,300	...	3,420	700	
			Bridge over Duvur drainage channel ...	4,090	...	3,013	850	
			Regulating sluice	5,420	166	4,384	800	
			Drainage culvert, 1 mile 1,980 feet ...	3,100	...	42	3,000	
			Bridge at 1 mile 3,135 feet	2,395	...	...	2,200	
			Aqueduct over southern channel, 2nd mile	..	...	...	3,000	
			Escape at 3 miles 1,980 feet	1,593	...	175	1,250	
			Bridge, 4 miles 1,716 feet	2,395	...	542	1,600	
			Do. over drop, 5 miles 3,894 feet ...	1,140	...	...	1,000	
			Drainage culvert, 6 miles 1,519 feet ...	1,695	...	323	1,200	
			Bridge at 6 miles 1,800 feet	2,095	...	200	1,700	
			Drainage culvert, 7 miles 3,672 feet ...	2,200	...	1,026	950	
			1 Fall at 7 miles 5,148 feet	865	...	614	150	
			1 Fall and bridge at 11 miles 1,020 feet.	2,402	...	135	2,000	
			1 Escape, 13 miles 970 feet	1,693	...	837	700	
			1 Drainage culvert, 13 miles 1,368 feet.	2,430	...	132	2,050	
			1 Bridge at 13 miles 1,793 feet ...	2,960	...	485	1,200	
			1 Irrigation sluice	725	...	186	200	
		L. Earthwork ...	Excavation and banking	50,495	2,121	29,754	10,000	
			3 Distribution channels	1,800	...	...	1,800	
			6 Do. do.	1,500	...	...	1,500	
			1 Do. do.	300	...	...	300	
			1 Do. do.	150	...	...	150	
		P. Maintenance.	Restoration of damages in first 14 miles. 14 miles to end.	4,720	...	31	4,500	
		B. Land ...	Compensation for land	1,477	...	...	600	
		L. Earthwork ...	Excavation and banking	15,157	...	2,124	4,765	50,765
	Central channel.	B. Land ...	Compensation for land	3,775	76	923	500	
		C. Works ...	Regulating sluices	2,490	1,477	474	400	
			Culvert, 1 mile 4,160 feet	1,033	...	815	200	
			Drop, 4 miles 1,320 feet	504	1	477	25	
			Skew culvert, 4 miles 2,360 feet ...	6,520	286	4,646	1,500	
			Culvert, 5 miles 4,798 feet	910	...	817	80	
			Drop, 8 miles 1,320 feet	361	...	285	70	
			Do. 9 „ 2,640 feet	465	...	421	40	
			2 Irrigation sluices	690	...	440	200	

Revised Schedule A, showing the Component Works of the Budget Items for the Year 1885-86—*cont.*

Item.	Main Head.	Name of Canal.	Sub-head.	Individual Work.	Amount of Estimate.	Outlay. To end of 1883-84.	Outlay. Probable during 1884-85.	Grant for 1885-86.	Item Total.
					RS.	RS.	RS.	RS.	RS.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS.					
				CAPITAL ACCOUNT—*cont.*					
				51. Irrigation and Navigation—*cont.*					
				Sangam Anicut System—cont.					
	(3) Distributaries —*cont.*	Central channel —*cont.*	C. Works ...	8 Irrigation sluices	2,160	...	1,522	500	
				6 Do. do.	1,848	...	1,034	500	
				1 Irrigation sluice	337	...	266	60	
			L. Earthwork ...	Excavation and banking	18,075	6,460	10,570	600	
				Minor irrigation channel, right bank.					
			B. Land ...	Compensation for land	115	...	...	100	
			C. Works ...	Dividing dam	250	...	...	250	
			L. Earthwork ...	Earthwork	1,030	...	...	1,030	
				Minor irrigation channel, left bank.					
			B. Land ...	Compensation for land	100	...	...	100	
			C. Works ...	Dividing dam	112	...	...	100	
				Culvert	910	...	...	900	
			L. Earthwork ...	Earthwork	1,250	...	...	1,250	
				Minor channel from 1st mile sluice, right bank.					
			B. Land ...	Compensation for land	166	...	...	160	
			C. Works ...	Dividing dam	190	...	...	190	
			L. Earthwork ...	Excavation and banking	724	...	...	720	
				Minor irrigation channel 1st mile sluice, left bank.					
			B. Land ...	Compensation for land	78	...	...	70	
			C. Works ...	Culvert over Dornal road	540	...	...	540	
			L. Earthwork ...	Excavation	745	...	...	740	

			Minor channel from 2nd mile sluice, right bank.					
		L. Earthwork ...	Excavation and banking	405	...	...	400	
			Minor channels below 3rd mile ...	...	...	...	10,000	
			Minor channel from 2nd mile sluice, left bank.					
		B. Land ...	Compensation for land	70	...	...	70	
		L. Earthwork ...	Excavation	560	...	...	550	21,845
	Duvur branch channel.	L. Earthwork ...	Excavation with 3 ramps	12,250	7,684	3,234	1,370	
			Additional improvements	...	...	...	7,000	8,370
	Duvur distributary channel.	C. Works ...	Drop	280	...	141	130	
			Sluice	365	...	2	350	480
	Sidipuram distributary.	C. Works ...	Drop	175	...	125	50	
			Sluice	365	...	...	350	
		L. Earthwork ...	Earthwork	617	...	527	90	490
(4) Drainage and Protective Works.	Chellayapolem drainage channel.	L. Earthwork ...	Earthwork	4,510	...	...	4,200	
			Drainage channel at 7 miles 3,672 feet.					
	Southern channel.	B. Land ...	Compensation for land	213	...	...	200	
		L. Earthwork ...	Earthwork	730	...	...	700	
			Drainage channel in connection with culvert.					
		L. Earthwork ...	Earthwork	500	...	...	500	5,600
			Total for Works ...	...	...	...	...	3,11,252
			Establishment at 23 per cent.	...	...	...	...	56,948
			Tools and Plant	...	...	..	...	11,400
			Grand Total ...	...	...	...	...	3,79,600

ABSTRACT.

Particulars.	Works.			Establishment.	Tools and Plant.	Grand Total.
	Land.	Works.	Total.			
	RS.	RS.	RS.	RS.	RS.	RS.
Grant as it ought to be	63,652	2,47,600	3,11,252	56,948	11,400	3,79,600
Grant as it stands, *vide* G.O., No. 453 I., of 16th May 1885 ...	1,00,000	1,98,049	2,98,049	45,551	11,400	3,55,000
Modification required	—36,348	49,551	13,203	11,397	...	24,600

Sangam,
31st May 1885.

(Signed) A. A. G. MALET,
Executive Engineer.

(„) J. W. RUNDALL,
Superintending Engineer, II Circle.

From A. A. G. MALET, Esq., Executive Engineer, Sangam Project division, to the Superintending Engineer, II Circle, dated Sangam, 31st May 1885, No. 103.

I have the honor to forward a revised list of grants which gives a total of Rs. 3,27,600 for sanctioned works and urgent works not yet sanctioned against the available reduced grant of Rs. 2,98,049.

	RS.
The excess for works is	29,551
Establishment at 23 per cent.	11,397
Total excess ...	40,948

2. I cannot, looking to the interest of Government, reduce the grant required below this figure.

3. This year's original grant for land is Rs. 1,00,000. Having consulted the special deputy collector, I propose reducing this to Rs. 80,000, leaving a balance of Rs. 20,000 to be transferred to works.

4. The provision in the list of grants now submitted provides only for bringing the anicut and Kanigiri tank to a safe state. A staff for the supervision of the works will therefore have to be retained next year.

5. The partial stoppage of work in the Kanigiri reservoir is also greatly to be deplored.

6. The tank has been nearly run dry this year to allow of the old sluices being demolished and the bund being carried across the escape channel of the north calingulah. As earth for the bund from the 50th to the 85th section and for the bund on both sides of the eastern head-sluice can only be obtained from the bed of the tank, this is a most suitable season for completing the earthwork, and if not completed the water level of the tank will again have to be lowered unnecessarily next year.

7. The grants also provide for completing—

1. The eastern main channel, 0·6 miles.
2. The Elliapalem branch channel.
3. The Allúr branch channel.
4. The Allúr tank channel head-sluice.
5. The Pyderu weir.
6. The central channel with its minor channels.
7. The southern channel 0·14 miles (nearly) without sluices or minor channels. The irrigation under it will be provided for roughly by means of pot sluices and short cuts.
8. Actual expenditure incurred in second section of eastern and southern channels on which work has now been stopped.

8. We might possibly save Rs. 15,000 by stopping working at once on the southern channel.

9. The area to be irrigated under this channel, 0·14 miles, is 11,300 acres; if only half this area is considered the stoppage of the work would result in a loss of revenue of at least Rs. 30,000. This result would be so suicidal that I have not ventured to take on myself the responsibility of stopping the works.

10. Considerable progress has been made on the works in the last two months.

11. The expenditure for April was Rs. 15,438, and I anticipate an expenditure of Rs. 43,000 this month.

12. The works are therefore in much more forward state than the figures in the list of grants would seem to show, and this being the case, I feel bound to point out that the interests of Government will suffer severely if a less grant than Rs. 2,40,000 for works and establishment be provided for expenditure in the current year.

13. I had hoped to at least get in the foundations of all the works on the eastern main channel 7-13 miles this year, so as to avoid the cost of baling when irrigation was in progress. This cannot now be done.

14. I know I ought to make a virtue of necessity and reduce the expenditure to the grant provided, but I do not see my way to doing it without entailing ruinous consequences.

15. The stoppage of works in their incomplete state will largely increase the cost of maintenance during construction.

16. Rs. 2,40,000 will only just suffice to complete some of the works in hand and to bring others to a safe state.

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Masulipatam, 12th June 1885, No. 253 S.G.

In continuation of my No. 250 S.G., of yesterday's date, I beg to forward a copy of a second letter from the Executive Engineer, Sangam Project division, explaining the difficulties in which the reduction of the grant places him, and the serious effect on the financial prospect of the scheme.

2. Mr. Malet is arguing for no reduction at all, but in any case I trust you will be able to arrange for the full amount of the schedule as now submitted being granted.

3. The works must be brought to a state which will enable them to earn revenue this year, not only for the sake of the works themselves, but also to enable us to carry out our engagements with the ryots who had been promised water next season.

ENCLOSURE.

From A. A. G. MALET, Esq., Executive Engineer, Sangam Project division, to the Superintending Engineer, II Circle, dated Sangam, 8th June 1885, No. 106.

In my letter accompanying the revised list of grants, I have dwelt as lightly as possible on the effect of reducing the grant for the current year as I considered it my duty to comply, as far as possible, with the orders of Government.

2. I desire, however, to offer a few additional remarks in connection with the nature of the work in the division and the principles on which it has been and is being worked.

3. The project is only estimated to give a return of about 6 per cent. It has up to date yielded no revenue to speak of, but the abatement of revenue owing to land being taken up for the works has been considerable.

The area taken up prior to 1st April 1885 is	Acres	3,855
Representing a revenue of	Rs.	20,071

4 This and the following years an increase of revenue was to be anticipated, and any action delaying this anticipation will tell heavily against the financial results of the project as the interest on the capital expended up to date must be a considerable sum.

5. The work has been carried on with a view to completing the head works, main canal, and Kanigiri reservoir on the earliest date possible, so that the establishment employed could be pushed on for the execution of works further down in the delta.

6. As we are, to a great extent, dependent on the seasons and the state of the river, I did not consider it advisable to inform you officially of my programme, which might after all turn out unworkable; but I now wish to show you that the reduction of the grant has entirely upset my plans.

7. With a good working season I had hoped to so far complete the anicut and Kanigiri reservoir by October next, that the balance of work could have been easily supervised by one upper subordinate assisted by an anicut and a tank superintendent.

8. Another or two subordinates would have had charge of the eastern channel, 0·6 miles, with its branch channels, the central channel, and the southern channel 0 to 14 miles.

9. This would have given me three or four upper subordinates (one would probably have been on leave) for pushing on with the extension of eastern and southern channels and investigating works to be executed round Allúr.

10. I hoped to get in all foundations for masonry works on southern channel 15 miles to end, and eastern channel 7 to 13 miles, before the rains set in, and a considerable reduction of establishment would have been possible before October 1886.

11. As it is, not only is the execution of work stopped to a great extent but the collection of materials also. The delay caused will certainly be one, and may very likely be two years.

12. I think the worst point is that the staff hoped, if funds were forthcoming, to do better than the original grant; and the feeling that one cannot do one's best for the work is most disheartening and tends to cause a loss of interest in it.

13. Work is now in full swing, and to partially stop it and then restart it will be much more difficult than to keep it going.

14. I would venture to suggest that there are other works which could better spare part of their grant than this one, and on which every rupee now spent will have a less appreciable effect and yield a less speedy return.

Telegram from the Chief Engineer for Irrigation, Madras, to the Superintending Engineer, IV Circle, Coimbatore, dated 17th June 1885.

Please wire amount you can spare from existing grant for Barur to provide Rs. 41,000 for Sangam project.

Telegram from the Chief Engineer for Irrigation, Madras, to the Superintending Engineer, VI Circle, Ramnad, dated 17th June 1885.

Please wire amounts you can spare from existing grant for Cauvery and Srívaikuntham under Capital to provide Rs. 41,000 for Sangam project.

Telegram from the Superintending Engineer, IV Circle, Coimbatore, to the Chief Engineer for Irrigation, Madras, dated 19th June 1885.

Your telegram seventeenth. Rupees twenty thousand can be spared from existing grant for Barur.

Telegram from the Superintending Engineer, VI Circle, Ramnad, to the Chief Engineer for Irrigation, Madras, dated 20th June 1885.

No money can be given up in the circle except by seriously delaying the Cauvery and Vennár regulators 30th June 1885.

No. 120 I.

Submitted to Government with the recommendation that the revised schedule showing the distribution of the grant for the Sangam anicut project under Productive Public Works, Capital Account, may be sanctioned, the amount applied for for compensation for land required for the Kanigiri reservoir being reduced from Rs. 71,200 to Rs. 54,852 pending further allotment later on in the year when funds become available.

2. The following transfers of funds are recommended for sanction :—

Productive Public Works—Capital Account.

From Barur Tank Project.	RS.	*To* Sangam Anicut Project.	RS.
Works	20,000	Works	13,203
Establishment	4,600	Establishment	11,397
Total ...	24,600	Total ...	24,600

3. Under the present restrictive orders, it is not considered desirable that an application should be submitted to the Government of India, either for an additional allotment or for re-allotment of the amount reduced from the grant for the Sangam anicut project.

4. As under the arrangements recently approved only three vents of the Oopar Odai dam of the Srívaikuntham anicut system have to be fitted with falling shutters as an experimental measure, leaving the remaining vents to be provided with similar shutters on the experiment proving successful, it is believed that the grant of Rs. 30,000 for the system under Capital Account will not be wholly required for expenditure during the current year, and, if so, the amount that will not be utilised can be transferred to meet the sum still required to be provided for the Sangam anicut project.

OOTACAMUND, (Signed) J. O. HASTED, Colonel, R.E.,
24th June 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 2nd July 1885, No. 576 I., Public Works.

The revised schedule, showing the distribution of the grant for the Sangam anicut project as altered by the Chief Engineer for Irrigation is approved, and the transfers of funds shown in paragraph 2 of the above endorsement are sanctioned.

2. The following deferred telegram will be sent to the Superintending Engineer, II Circle :—

"Your letter, No. 250 S.G., of 11th ultimo. Revised schedule approved, amount entered for land for Kanigiri reservoir being reduced from Rs. 71,200 to Rs. 54,852, pending further allotment later on."

3. The Superintending Engineer, VI Circle, will report at an early date what portion of the grant for the Srívaikuntham anicut system under Capital Account will not be required for expenditure during the current year, so that it may be transferred to the Sangam anicut project.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
" " " IV "
" " " VI "
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 2nd.

Recd. *Encl.*

G.O., 2nd July 1885, No. 576 I.

JULY.

Sangam Anicut Project

Orders approving of the revised schedule showing the distribution of the grant for the — and sanctioning certain transfers of funds.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Masulipatam, 1st June 1885, No. 527 K.S.

I have the honor to forward, herewith, for your approval and sanction of Government, the estimates named below for special repairs to the Kistna floating plant during 1885-86, from the budget provision of Rs. 1,500—

Repairing iron punt No. 29 ... ... Rs. 820

Memorandum from the Chief Engineer for Irrigation, to the Superintending Engineer, II Circle, dated 9th June 1885, No. II/55 K.S.

With reference to letter, No. 527 K.S., dated 1st June 1885, from the Superintending Engineer, II Circle, the undersigned has the honor to request that he will be so good as to report, at an early date, whether he concurs in the opinion expressed by the Executive Engineer of the Kistna Eastern division, regarding the advisability of repairing iron punt No. 29, in his remarks on the estimate, amounting to Rs. 820, for executing special repairs to the punt, the original value of which is shown in the floating plant statement printed in proceedings of Madras Government, No. 1084 I., dated 28th November 1884, to be Rs. 400, while the present book value is represented to amount to only Rs. 20. As the estimate, which is herewith returned for reference, is unaccompanied by a report, the circumstances under which it is considered to be advisable to incur the proposed large outlay on repairs should have been explained in the letter under reference.

From J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Masulipatam, 15th June 1885, No. 641 K.S.

In reply to your No. 55 K.S., of the 9th instant, I have the honor to say that I concur in the Executive Engineer's opinion as to the advisability of repairing punt No. 29.

2. I inspected it with the Executive Engineer, and we decided it was worth while to put in a new bottom.

3. I regret that this was not specially reported when I sent on the estimate.

ORDER—dated 3rd July 1885, No. 577 I., Public Works.

The following estimate, amounting to Rs. 820, for executing special repairs to iron punt No. 29, belonging to the floating plant of the Kistna delta system, is sanctioned:—

G. Productive Public Works.
Revenue Account.
38. Irrigation and Navigation.
(Working Expenses.)
Kistna Delta System.
Eastern Section.
III. Tools and Plant.
13. Repairs and Carriage.
Special repairs to floating plant.

Repairing iron punt No. 29, Estimate ... ... Rs. 820

2. This sanction has been registered as No. 81 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one enclosure.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated, July, 3rd.

Recd. *Encl.*

G.O., 3rd July 1885, No. 577 I.

JULY.

Iron Punt

Estimate for special repairs to an — belonging to the floating plant of the Kistna delta system, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 279 S.G.

REPORT on estimate, amounting to Rs. 3,035, for special repairs to the Central Channel, Sangam Project.

This channel was much damaged by flood water during the exceptionally heavy rains of November and December 1884. Banks were washed away in the channel, silted in some places, and scoured out in others.

2. The Executive Engineer has submitted the present estimate for sanction under P. Maintenance; but as there is no provision in the sanctioned estimate, the required funds will have to be allotted from the balance under unforeseen works.

3. I have been in correspondence with the Executive Engineer as to the possibility of reducing the estimate, but he does not consider it susceptible of reduction. It is therefore forwarded for the approval of the Chief Engineer and the sanction of Government, and allotment of funds.

MASULIPATAM, (Signed) J. W. RUNDALL,
17th June 1885. Superintending Engineer, II Circle.

ORDER—dated 3rd July 1885, No. 578 I., Public Works.

The estimate, amounting to Rs. 3,035, for executing special repairs to the central channel of the Sangam anicut project, is sanctioned from the balance of the lump sum provision in the Sangam anicut project estimates for unforeseen works, which will then be reduced to Rs. 33,945.

2. This sanction has been registered as No. 80 I. of 1885-86, and classified as shown below :—

N. Productive Public Works.
Capital Account.
51. Irrigation and Navigation.
Sangam Anicut Project.
I. Works.
(3) Distributaries.
P. Maintenance.
Central Channel.

Special repairs, Estimate ... ... Rs. 3,035.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with duplicate abstract estimate.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 3rd.

Recd. *Encl.*

G.O., 3rd July 1885, No. 578 I.

JULY.

Sangam Anicut Project

Estimate for special repairs to the central channel of the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 121 I.

Note by the Chief Engineer for Irrigation.

The accompanying statements, comparing the grants with the expenditure on irrigation and navigation and agricultural works during 1884-85, are submitted to Government with the following remarks with reference to G.O., No. 141 W., dated 12th January 1883. The statements have been duly verified by the Examiner of Public Works Accounts, but the figures representing expenditure are not final, as the accounts for the year have not yet been closed.

2. The total outlay incurred during the year from Imperial funds was Rs. 52,63,598, or Rs. 3,19,398 less than the revised estimate as shown below, the portion of the grant which lapsed being 5·72 per cent. on the revised estimate, or 1·50 per cent. more than in the previous year :—

—	Revised Estimate.	Expenditure.	Short Outlay.
	RS.	RS.	RS.
Productive Public Works { Capital Account ...	17,67,510	16,01,173	1,66,337
Productive Public Works { Revenue Account ...	9,79,868	10,23,561	— 43,693
Public Works not classed as Productive	25,09,000	24,20,770	88,230
Protective Works	3,26,618	2,18,094	1,08,524
Total ...	55,82,996	52,63,598	3,19,398

PRODUCTIVE PUBLIC WORKS.

3. *Capital Account.*—The outlay incurred under this head fell short of the grant by Rs. 1,66,337 as shown below :—

	Excess Outlay.	Short Outlay.
	RS.	RS.
Works	...	1,03,416
Establishment	...	19,279
Tools and Plant	...	39,821
Suspense Account	683	...
Total ...	683	1,62,516
Less receipts on Capital Account	4,504	...
Net Total ...	— 3,821	1,62,516
Deduct excess outlay	...	— 3,821
Net short outlay ...	...	1,66,337

4. The short outlay under *Works* occurred on the following systems :—

	RS.
Godávari delta ...	7,586
Kistna „ ...	43,768
Sangam anicut ...	4,120
Kurnool canal ...	10,000
Barur tank ...	15,287
Cauvery delta ...	22,114
Srívaikuntham anicut ...	541
Total ...	1,03,416

The amounts provided for payment of compensation for land taken up for works in the Kistna delta were not fully adjusted before the close of the year, and the prevalence of cholera delayed the execution of the Chendrayakodu drain in the Gudiváda division, and widening the main canal and improving the Repalle and Tungabhadra drains in the Kistna Western division. The necessary advice of expenditure not having reached the Examiner of Public Works Accounts, the expenditure incurred in England for law charges connected with the Kurnool canal, for which a sum of Rs. 10,000 was provided in the revised estimate, has not been adjusted. The progress on works of the Barur tank project was slow owing to want of skilled labor and to the necessity for revising the sanctioned estimates, the rates allowed therein being found insufficient. The grant for the new cut and masonry works on the Vennár of the Cauvery delta system was not fully utilised; the land required for the new cut having been taken up late in the year and difficulty having been experienced in procuring labor owing to the numerous repair works which were necessitated by the floods of December last being in hand. The short outlay on the other systems is so small that no special remarks are called for.

5. The charge for "Establishment" being calculated at a fixed percentage on the expenditure on works is less than the grant.

6. The short outlay under "Tools and Plant" is apparently due to the increase of capital of the Dowlaishweram workshops not having yet been adjusted.

7. *Revenue Account.*—The expenditure under this head exceeded the grant by Rs. 43,693 as shown below :—

	Short Outlay. RS.	Excess Outlay. RS.
Extensions and Improvements ...	12,579	...
Maintenance and Repairs ...	...	44,134
Establishment ...	...	10,080
Tools and Plant ...	...	493
Refund of revenue ...	...	1,565
Total ...	12,579	56,272
Deduct short outlay ...	...	12,579
Net excess outlay ...	...	43,693

8. Rs. 7,000 of the short outlay under "Extensions and Improvements" and a similar amount of the excess outlay under "Maintenance and Repairs" are due to the transfer of funds from "Extensions and Improvements, Kurnool canal," to "Maintenance and Repairs, Cauvery delta," recommended for sanction in proceedings of Madras Government, No. 72 I., dated 26th January 1885, not having been included in the revised estimate as finally adopted by the Government of India. Minor works under "Extensions and Improvements" in the Negapatam division were not carried out as rapidly as was intended.

9. The Superintending Engineer, I Circle, having submitted his application for additional allotments under "Maintenance and Repairs" too late in the year, it was not possible to provide funds required for restoring the Gunnaram aqueduct, which

had been seriously* damaged by floods; but, as the restoration was of an urgent nature, the work was, with the permission* of the Government of India, allowed to be proceeded with, outlay to the extent of Rs. 30,000 being treated as permissible excess. The expenditure actually incurred on the work exceeded, by Rs. 25,220, the amount authorised to be spent in excess of the grant. A large portion of this excess is covered by the unspent balances in other divisions. Work done in the Gudiváda division was not fully paid for pending final inspection, while silt in the main canal, Kistna Western division, was not all removed. The Executive Engineer of the Negapatam division surrendered a portion of the allotment too late in the year. Repairs to the Korampalem tank, in the Tinnevelly division, were not carried out to the extent intended, for want of labor.

* G.O., No. 273 I., of 16th March 1885.

10. The charge for "Establishment" at 6 per cent. on indirect revenue has been calculated on the revised estimate of such revenue, the actuals not having as yet been ascertained.

PUBLIC WORKS NOT CLASSED AS PRODUCTIVE.

11. The outlay under this head fell short of the grant by Rs. 88,230, as shown below:—

—	Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.		Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.	Agricultural Works.	Total.
	Capital Account.	Revenue Account.			
	RS.	RS.	RS.	RS.	RS.
Original Works	9,156	2,134	1,014	30,850	43,154
Repairs	...	— 5,887	38,681	— 2,516	30,278
Establishment	2,136	— 634	5,254	8,037	14,793
Tools and Plant	150	582	286	332	1,350
Refund of revenue	...	...	— 219	— 1,126	— 1,345
Total ...	11,442	— 3,805	45,016	35,577	88,230

IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

12. *Capital Account.*—The expenditure on the storage works of the Pelandorai anicut project amounted to only Rs. 2,935, against a grant of Rs. 12,000, as it was difficult to get labor owing to higher rates paid on Local Fund works, and, as the harvest was late, compensation due for land taken up for the project has not yet been paid.

13. *Revenue Account.*—The Executive Engineer of the South Arcot division surrendered a portion of the grant under "Extensions and Improvements" too late in the year to admit of its being reappropriated to other divisions. The expenditure under "Maintenance and Repairs" exceeded the grant by Rs. 5,887 owing to a number of works connected with the Pálár and Pelandorai anicut systems having been put in hand on emergency.

IRRIGATION AND NAVIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

14. The expenditure on original works and repairs fell short of the grants by Rs. 1,014 and 38,681, respectively. In the Tinnevelly division the progress on both original works and repairs was retarded, the tanks having been filled by the heavy rains of October, November, and December 1884. In the Trichinopoly division, original works having been carried out more vigorously than was expected, the expenditure exceeded the grant. The expenditure incurred on original works in the No. I. Tank division exceeded the grant by Rs. 2,231, but this excess is covered by the

unspent balance of the grants under "Original Works" for the execution of "Tank Maintenance Works" in the Madura and Chingleput divisions. In the latter division the expenditure under "Repairs" on "Tank Maintenance Works" amounted to only Rs. 10,649, against a grant of Rs. 25,000, the attention of the establishment having been greatly taken up in closing breaches caused by floods. The grant for repairs to tank maintenance works in the Madura division was fully utilised. The expenditure incurred on repairs to minor irrigation works under the charge of Collectors, as booked by the Examiner of Public Works Accounts, amounted to Rs. 4,02,421, against a grant of Rs. 4,20,000, showing a lapse of Rs. 17,579, or 4·18 per cent. on the grant. The expenditure as reported by Collectors to the Board of Revenue and recorded in their proceedings, No. 1478, dated 18th May 1885, is Rs. 2,131 more than that shown by the Examiner of Public Works Accounts, the greatest difference being in the expenditure shown to have been incurred in the Tinnevelly district, viz., Rs. 3,438. The grants for expenditure on minor irrigation works have been fairly utilised in all the districts except in the Nellore, Kistna, and Tanjore districts, in which from 12 to about 14 per cent. was left unexpended.

AGRICULTURAL WORKS.

15. The expenditure under "Original Works" fell short of the grant by Rs. 30,850 while that under "Repairs" exceeded the grant by Rs. 2,516. The grants for original works in the Godávari Western, Nellore, Tanjore, and Tinnevelly divisions were not fully utilised owing to delay in acquiring and paying for land required for river embankments. The expenditure on the work in the North Arcot division for which an allotment was granted under "Agricultural Works" was transferred to "Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept." The Executive Engineer of the Trichinopoly division surrendered a portion of the grant for minor original works too late in the year. The expenditure incurred on repairs in the Godávari Western and Negapatam divisions exceeded the grants owing to the river embankments damaged by floods having been repaired on emergency. A portion of the excess expenditure in these divisions is covered by the unspent balances in the Chingleput, Tanjore, and Trichinopoly divisions where repairs were not carried out to the extent anticipated.

PROTECTIVE WORKS.

16. The expenditure on protective works amounted to Rs. 2,18,094, or Rs. 1,08,524 less than the revised estimate as shown below :—

	RS.
Works	89,294
Establishment	17,183
Tools and Plant	2,047
Total ...	1,08,524

The progress of work on the Buckingham canal was not as rapid as was intended owing to—

(1) the difficulty experienced in collecting materials ;
(2) the delay in acquiring land ;
(3) competition for labor with the Sangam project and railway works ;
(4) unusual rainfall, and
(5) prevalence of cholera.

The amount provided for payment of compensation for land taken up for the Rushikulya project was not fully utilised. The expenditure incurred in previous years on the investigation of the requirements of the Ganjam-Gopálpur canal and charged to this head was credited thereto during the year, the amount having been debited to Provincial funds under which the estimates for the canal were sanctioned.

PROVINCIAL, IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

17. The expenditure incurred from Provincial funds amounted to Rs. 4,42,926, or Rs. 10,743 less than the revised estimate. The expenditure on Capital Account is

Rs. 4,020 more, and that on Revenue Account Rs. 14,743 less, than the grants, as shown below:—

	Capital Account.		Revenue Account.	
	Excess.	Short Outlay.	Excess.	Short Outlay.
	RS.	RS.	RS.	RS.
Works	...	2,945	...	4,825
Repairs	...	...	...	11,385
Establishment	5,110	...	...	3,046
Tools and Plant	1,855	...	4,259	...
Refund of revenue	...	...	234	...
Total ...	6,965	2,945	4,494	19,256
Net difference ...	4,020	...	...	14,743

The excess expenditure on Capital Account is due to the adjustment of the cost of investigating the requirements of the Ganjam-Gopálpur canal. The short outlay on Revenue Account is due to the grant for restoring the Red Hills tank of the Madras water-supply and irrigation extension project not having been fully utilised.

GENERAL REMARKS.

18. During the year frequent applications for modifications of allotments were received from Superintending Engineers without, in many cases, clear explanation being afforded of their necessity, while some of the applications were received too late in the year for submission to Government for sanction. Were greater care exercised in the first instance by Executive Engineers in ascertaining the requirements of works in their divisions and thereafter strictly regulating their expenditure in accordance with sanctioned allotments, the necessity for frequent modifications of grants would be obviated to a considerable extent.

OOTACAMUND, (Signed) J. O. HASTED, Colonel., R.E.,
24th June 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ENCLOSURES.

STATEMENT showing the Grant and Expenditure on Irrigation and Navigation Works for 1884-85.

System.	Divisions.	Capital Account.		Revenue Account.			
				Extensions and Improvements.		Maintenance and Repairs.	
		Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.
IMPERIAL.		RS.	RS.	RS.	RS.	RS.	RS.
Productive Public Works.							
Godávari delta	Eastern ..	58,940	54,393	10,346	11,010	85,000	85,343
	Central ..	1,62,500	1,60,554	5,000	3,706	50,000	1,05,270
	Western ..	80,400	79,307	7,000	7,354	75,000	74,529
	Total ..	3,01,840	2,94,254	22,346	22,070	2,10,000	2,65,142
Kistna delta	Eastern ..	99,598	89,260	4,500	4,578	71,000	70,097
	Gudiváda ..	1,30,400	1,18,274	4,500	4,163	17,000	14,897
	Western ..	1,56,570	1,35,266	6,175	6,008	70,000	61,819
	Total ..	3,86,568	3,42,800	15,175	14,749	1,58,000	1,46,813
Pennér anicut	Nellore ..	..	..	7,000	6,967	18,000	17,199
Deduct old maintenance charges.	....	..	..	3,564	3,564	13,860	13,860
	Net Total ..	..	..	3,436	3,403	4,140	3,339
Sangam anicut	Sangam ..	5,00,000	4,95,880	..	..	..	..
Kurnool canal	Kurnool canal.	10,000	..	45,000	36,971	1,16,000	1,16,988
Barur tank	Barur ..	55,265	39,978	..	..	..	..

Statement showing the Grant and Expenditure on Irrigation and Navigation Works, &c.—*cont.*

System.	Divisions.	Capital Account.		Revenue Account.			
				Extensions and Improvements.		Maintenance and Repairs.	
		Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.
		RS.	RS.	RS.	RS.	RS.	RS.
IMPERIAL—*cont.*							
Productive Public Works—cont.							
Cauvery delta	Tanjore ..	..	..	14,767	15,112	30,500	32,705
	Negapatam ..	..	..	17,873	13,840	30,000	32,835
	Cauvery-Vennár Regulator ..	1,57,968	1,35,854	100	23	500	738
	Total ..	1,57,968	1,35,854	32,740	28,975	61,000	66,278
Deduct old maintenance charges.	....	..	..	..	..	1,05,634	1,05,634
	Net Total ..	1,57,968	1,35,854	32,740	28,975	— 44,634	— 39,356
Srívaikuntham anicut ..	Tinnevelly ..	11,268	10,727	2,000	1,950	15,000	9,714
Deduct old maintenance charges.	....	..	..	352	352	5,208	5,208
	Net Total ..	11,258	10,727	1,648	1,598	9,792	4,506
	Total ..	14,22,909	13,19,493	1,20,345	1,07,766	4,53.298	4,97,432
PUBLIC WORKS NOT CLASSED AS PRODUCTIVE.							
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.							
Chembrambákam tank ..	Chingleput ..	..	..	1,602	1,212	7,492	7,967
Deduct old maintenance charges.	....	..	..	— 2,283	— 2,283	3,097	3,097
	Net Total ..	..	..	— 681	— 1,071	4,395	4,870
Pálár anicut ..	Chingleput ..	2,195	2,066	620	435	..	..
	North Arcot ..	5,000	5,038	4,000	3,997	25,000	27,596
	Total ..	7,195	7,104	4,620	4,432	25,000	27,596
Deduct old maintenance charges.	....	..	..	178	178	2,909	2,909
	Net Total ..	7,195	7,104	4,442	4,254	22,091	24,687
Pelandorai anicut	South Arcot ..	12,000	2,935	2,500	944	11,000	13,816
Deduct old maintenance charges.	....	..	..	59	59	58	58
	Net Total ..	12,000	2,935	2,441	885	10,942	13,758
	Total ..	19,195	10,039	6,202	4,068	37,428	43,315
Works for which neither Capital nor Revenue Accounts are kept.	....	..	..	2,63,001	2,61,987	12,02,109	11,63,428
Agricultural works	....	..	..	1,64,940	1,34,090	1,94,991	1,97,507
Total, Irrigation and Navigation and Agricultural Works	....	19,195	10,039	4,34,143	3,96,077	14,34,528	13,60,935
PROTECTIVE WORKS.							
Ganjam-Gopálpur canal ..	....	..	— 623	..	..	..	..
Rushikulya project	Ganjam ..	1,39,599	1,01,860	..	..	..	..
Buckingham canal	Buckingham canal ..	1,50,000	99,068	..	..	..	..
	Total ..	2,89,599	2,00,305	..	..	..	..
PROVINCIAL WORKS.							
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.							
Buckingham canal	Buckingham canal ..	1,50,406	1,50,406	2,380	1,958	70,764	70,858
Madras water-supply and irrigation extension project ..	Chingleput ..	6,618	4,709	2,400	— 2,003	58,284	46,805
Ganjam-Gopálpur canal ..	....	366	988	..	..	..	..
Project division	B. Project ..	1,500	1,607	..	..	..	..
	C. do. ..	1,620	758	..	..	..	..
	Lower Coleroon.	1,230	327	..	..	..	..
	Total ..	1,61,740	1,58,795	4,780	— 45	1,29,048	1,17,663

APPENDIX A, showing the Grant and Expenditure incurred on Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept and on Agricultural Works during 1884-85.

Division.	Original Works. Major. Grant.	Original Works. Major. Expenditure.	Original Works. Minor. Grant.	Original Works. Minor. Expenditure.	Repairs. Grant.	Repairs. Expenditure.
Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam	500	669	9,000	8,846	18,000	18,203
Vizagapatam	..	..	1,500	932	9,000	9,177
Godávari Eastern	..	81	5,000	5,248	10,000	10,014
Do. Western	..	..	1,000	1,034	2,500	2,605
Kistna Eastern	..	..	2,300	2,213	7,000	6,002
Do. Western	..	..	..	— 5	..	..
Nellore	13,965	13,301	11,732	11,533	44,470	44,388
Cuddapah	9,836	10,079	3,000	2,872	25,000	25,000
Kurnool	..	..	2,900	1,993	8,500	6,880
Bellary	6,335	6,242	1,500	1,205	51,800	55,243
Presidency	856	856	..	...	2,500	2,669
Chingleput	..	..	14,689	15,213	65,000	65,200
North Arcot	..	1,422	8,700	7,868	50,000	49,715
South do.	19,735	17,386	11,037	10,524	95,000	96,910
Salem	..	..	1,468	} 6,040	5,427	} 54,070
Coimbatore	30,249	29,613	4,832	}	49,193	}
Tanjore	5,000	8,777	1,750	1,714	4,000	3,645
Negapatam	3,051	2,087	2,000	1,572	3,000	2,489
Trichinopoly	3,540	3,490	7,100	10,102	38,000	37,521
Madura	5,453	5,308	12,560	12,620	34,200	33,867
Tinnevelly	20,272	16,464	9,000	8,110	62,000	54,843
Barur	..	471	440	246	380	366
Sangam	..	..	..	..	1,330	1,330
West Coast	..	..	..	..	1,380	335
Improving Tanks.. { Madura	..	..	3,800	2,959	23,861	24,106
Improving Tanks.. { Chingleput	..	..	5,000	2,765	25,000	10,649
Survey Operations.. { No. I Tank	..	..	8,673	10,905	14,802	14,802
Survey Operations.. { No. II Do.	..	..	8,792	9,193	..	..
Total ..	1,18,792	1,16,246	1,37,773	1,35,702	6,51,343	6,30,035
Old maintenance charges	..	..	6,436	10,039	1,30,766	1,30,972
Total ..	1,18,792	1,16,246	1,44,209	1,45,741	7,82,109	7,61,007
Repairs to Minor Irrigation Works.						
Ganjam	..	..	..	..	17,400	15,890
Vizagapatam	..	..	..	..	5,200	5,012
Godávari	..	..	..	..	11,114	11,100
Kistna	..	..	..	..	8,000	6,938
Nellore	..	..	..	..	24,000	21,102
Cuddapah	..	..	..	..	44,044	43,366
Anantapur	..	..	..	..	10,820	11,672
Bellary	..	..	..	..	7,670	9,699
Kurnool	..	..	..	..	5,568	5,722
Chingleput	..	..	..	..	40,500	41,140
North Arcot	..	..	..	..	63,000	61,788
South do.	..	..	..	..	63,174	60,830
Tanjore	..	..	..	..	14,492	12,012
Trichinopoly	..	..	..	..	12,000	11,738
Madura	..	..	..	..	33,400	32,983
Tinnevelly	..	..	..	..	25,000	21,556
Coimbatore	..	..	..	..	5,660	5,599
Salem	..	..	..	..	24,000	24,274
Reserve	..	..	..	..	4,958	..
Total Minor Irrigation Works ..	..	..	..	..	4,20,000	4,02,421
Total Irrigation and Navigation Works.	1,18,792	1,16,246	1,44,209	1,45,741	12,02,109	11,63,428
Agricultural Works.						
River Conservancy.						
Vizagapatam	..	..	..	..	500	499
Godávari Eastern	..	..	..	..	16,000	15,532
Do. Central	..	..	..	..	6,000	5,500
Do. Western	..	..	38	..	5,900	4,582
Kistna Eastern	..	..	..	..	1,200	1,181
Do. Western	4,286	3,548	..	..	1,800	1,579
Nellore	..	..	500	492	1,000	992
Cuddapah	..	..	..	..	1,850	2,052

Appendix A, showing the Grant and Expenditure incurred on Irrigation, &c.—*cont.*

Division.	Original Works.				Repairs.	
	Major.		Minor.			
	Grant.	Expenditure.	Grant.	Expenditure.	Grant.	Expenditure.
Agricultural Works—cont.	RS.	RS.	RS.	RS.	RS.	RS.
River Conservancy—*cont.*						
Chingleput	..	..	690	..	..	..
South Arcot	..	..	..	..	1,100	1,101
Salem	..	..	..	..	235	} 7,670
Coimbatore	..	..	868	781	7,665	
Tanjore	..	..	..	..	17,000	16,599
Negapatam	..	..	..	..	9,509	11,847
Trichinopoly	..	..	1,750	1,413	7,000	7,958
Cauvery and Vennár Regulator ..	..	..	..	..	200	252
Total ..	4,286	3,548	3,846	2,686	76,959	77,344
River Embankments.						
Vizagapatam	..	..	..	..	200	200
Gódávari Eastern	26,300	27,145	..	..	10,500	11,067
Do. Central	25,200	25,375	..	..	13,300	13,191
Do. Western	20,975	18,678	..	..	7,000	8,556
Kistna Eastern	3,547	3,567	..	..	5,000	4,846
Do. Western	9,714	9,097	..	..	3,000	2,985
Nellore	2,453	..	750	770	3,160	2,471
Cuddapah	11,767	11,659	..	..	650	636
Chingleput	..	139	660	352	4,816	3,759
South Arcot	..	..	160	..	2,000	2,558
North do.	3,190	..	..	..	..	..
Coimbatore	..	..	1,000	685	2,600	2,600
Tanjore	12,766	8,530	1,000	520	28,858	26,562
Negapatam	..	..	738	110	20,491	25,585
Trichinopoly	4,911	5,254	3,000	1,088	14,000	12,266
Tinnevelly	25,178	11,780	..	..	1,957	1,925
Total ..	1,46,001	1,21,224	7,308	3,525	1,17,532	1,19,207
Drainages.						
Negapatam	..	..	1,815	1,892	..	..
Trichinopoly	..	..	..	..	500	78
Total ..	..	..	1,815	1,892	500	78
Miscellaneous.						
Godávari Eastern	..	..	400	174	..	829
Do. Western	..	..	200	131	..	..
Kistna Western	..	—32	..	..	..	49
South Arcot	..	..	140	..	..	..
Salem	..	..	30	} 702	..	..
Coimbatore	..	..	674		..	..
Barur project	..	..	240	240	..	..
Total ..	..	—32	1,684	1,247	..	878
Total, Agricultural Works ..	1,50,287	1,24,740	14,653	9,350	1,94,991	1,97,507

OOTACAMUND,
24th June 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

ABSTRACT Statement showing the Revised Estimate for and Expenditure incurred on Irrigation Works during 1884-85.

—	Revised Estimate. Works.	Revised Estimate. Repairs.	Revised Estimate. Establishment.	Revised Estimate. Tools and Plant.	Revised Estimate. Less Receipts on Capital Account.	Revised Estimate. Total.	Outlay. Works.	Outlay. Repairs.	Outlay. Establishment.	Outlay. Tools and Plant.	Outlay. Suspense Account.	Outlay. Refund of Revenue.	Outlay. Less Receipts on Capital Account.	Outlay. Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
IMPERIAL.														
PRODUCTIVE PUBLIC WORKS.														
Capital Account.														
Godávari delta	3,01,840	..	67,100	49,744	..	4,18,684	2,94,254	..	66,009	15,011	..	..	— 5	3,75,269
Kistna do.	3,86,568	..	81,200	47,875	..	5,15,643	3,42,800	..	75,678	43,461	683	..	— 102	4,62,520
Pennér anicut	..	..	..	..	..	..	..	..	..	..	..	..	— 6	— 6
Sangam do.	5,00,000	..	1,00,901	22,000	..	6,22,901	4,95,880	..	97,554	21,998	..	..	..	6,15,432
Kurnool canal	10,000	..	..	..	— 72,000	— 62,000	..	..	..	..	..	..	— 76,268	— 76,268
Barur tank	55,265	..	12,496	630	..	68,391	39,978	..	8,977	450	..	..	..	49,405
Cauvery delta	1,57,968	..	31,042	1,500	..	1,90,510	1,35,854	..	25,290	1,008	..	..	— 123	1,62,029
Srívaikuntham anicut	11,268	..	2,113	..	..	13,381	10,727	..	2,065	..	..	..	..	12,792
Total ..	14,22,909	..	2,94,852	1,21,749	— 72,000	17,67,510	13,19,493	..	2,75,573	81,928	683	..	— 76,504	16,01,173
Revenue Account.														
Godávari delta	22,346	2,10,000	1,53,340	42,627	..	4,28,313	22,070	2,65,142	1,66,504	47,316	..	145	..	5,01,177
Kistna do.	15,175	1,58,000	95,150	18,370	..	2,86,695	14,749	1,46,813	93,198	17,262	..	1,298	..	2,73,320
Pennér anicut	3,436	4,140	8,368	797	..	16,741	3,403	3,339	7,104	— 7	..	..	..	13,839
Sangam do.	..	..	1,800	..	..	1,800	..	..	1,800	..	..	..	..	1,800
Kurnool canal	45,000	1,16,000	40,267	4,772	..	1,99,039	36,971	1,16,988	45,146	4,659	..	..	..	2,03,764
Cauvery delta	32,740	— 44,634	32,725	308	..	28,139	28,975	— 39,356	29,371	— 1,724	..	122	..	17,388
Srívaikuntham anicut	1,648	9,792	7,701	..	..	19,141	1,598	4,506	6,308	— 139	..	..	..	12,273
Total ..	1,20,345	4,63,298	3,39,351	6,6874	..	9,79,868	1,07,766	4,97,432	3,49,431	67,367	..	1,565	..	10,23,561
PUBLIC WORKS NOT CLASSED AS PRODUCTIVE—WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.														
Capital Account.														
Pálár anicut	7,195	..	1,655	..	..	8,850	7,104	..	1,634	..	..	..	..	8,738
Pelandorai anicut..	12,000	..	2,760	150	..	14,910	2,935	..	645	..	..	..	..	3,580
Total ..	19,195	..	4,415	150	..	23,760	10,039	..	2,279	..	..	..	..	12,318
Revenue Account.														
Chembrambakam tank	— 681	4,395	859	77	..	4,650	— 1,071	4,870	768	— 134	..	..	..	4,433
Pálár anicut	4,442	22,091	6,158	222	..	32,913	4,254	24,687	6,669	— 77	..	..	..	35,533
Pelandorai anicut..	2,441	10,942	3,083	69	..	16,535	885	13,758	3,297	— 3	..	..	..	17,937
Total ..	6,202	37,428	10,100	368	..	54,098	4,068	43,315	10,734	— 214	..	..	..	57,903

Abstract Statement showing the Revised Estimate for and Expenditure incurred on Irrigation Works during 1884-85—*cont.*

—	Revised Estimate.						Outlay.							
	Works.	Repairs.	Establishment.	Tools and Plant.	Less Receipts on Capital Account.	Total.	Works.	Repairs.	Establishment.	Tools and Plant.	Suspense Account.	Refund of Revenue.	Less Receipts on Capital Account.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
IMPERIAL—cont.														
Works for which neither Capital nor Revenue Accounts are kept ..	2,63,001	12,02,109	4,96,628	22,089	..	19,83,827	2,61,987	11,63,428	4,91,374	21,803	..	219	..	19,38,811
Agricultural Works	1,64,940	1,94,991	83,784	3,600	..	4,47,315	1,34,090	1,97,507	75,747	3,268	..	1,126	..	4,11,738
PROTECTIVE WORKS.														
Ganjam-Gopálpur canal	..	..	..	..	..	..	— 623	..	— 15,819	— 971	..	..	..	— 17,413
Rushikulya project	1,39,599	..	13,019	24,000	..	1,76,618	1,01,860	..	11,655	22,939	..	..	..	1,36,454
Buckingham canal	1,50,000	..	..	..	..	1,50,000	99,068	..	..	..	..	..	..	99,068
D. Project	..	..	..	..	..	..	..	..	..	— 15	..	..	..	— 15
Total ..	2,89,599	..	13,019	24,000	..	3,26,618	2,00,305	..	— 4,164	21,953	..	..	..	2,18,094
PROVINCIAL WORKS.														
IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.														
Capital Account.														
Buckingham canal	1,50,406	..	69,094	16,453	..	2,35,953	1,50,406	..	56,635	15,099	..	..	..	2,22,140
Madras water-supply and irrigation extension project	6,618	..	1,522	..	..	8,140	4,709	..	1,073	..	..	..	..	5,782
Ganjam-Gopálpur canal	366	..	84	..	..	450	988	..	15,903	2,217	..	..	..	19,108
B. Project division	1,500	..	15,500	..	..	17,000	1,607	..	16,457	86	..	..	..	18,150
C. do. do.	1,620	..	9,302	..	..	10,922	758	..	10,364	136	..	..	..	11,258
Lower Coleroon anicut project ..	1,230	..	8,198	425	..	9,853	327	..	8,742	1,195	..	..	..	10,264
Vyalur project	..	..	364	..	..	364	..	..	..	..	..	..	..	..
Total ..	1,61,740	..	1,04,064	16,878	..	2,82,682	1,58,795	..	1,09,174	18,733	..	..	..	2,86,702
Revenue Account.														
Buckingham canal	2,380	70,764	20,833	1,119	..	95,096	1,958	70,858	21,465	1,425	..	234	..	95,940
Madras water-supply and irrigation extension project	2,400	58,284	14,458	749	..	75,891	— 2,003	46,805	10,780	4,702	..	..	..	60,284
Total ..	4,780	1,29,048	35,291	1,868	..	1,70,987	— 45	1,17,663	32,245	6,127	..	234	..	1,56,224
Total, Provincial ..	1,66,520	1,29,048	1,39,355	18,746	..	4,53,669	1,58,750	1,17,663	1,41,419	24,860	..	234	..	4,42,926

OOTACAMUND,
24th June 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

ORDER—dated 4th July 1885, No. 579 I., Public Works.

His Excellency the Governor in Council is glad to find that the grants for expenditure on irrigation and navigation and agricultural works were, on the whole, fairly utilised considering the difficulties encountered in the execution of work in consequence of the unusually heavy rainfall and floods during October, November and December 1884.

2. The Examiner of Public Works Accounts will place himself in communication with the Collectors concerned for adjusting the differences between the expenditure on repairs to minor irrigation works as recorded in his books and as reported by Collectors to the Board of Revenue.

3. The attention of Superintending Engineers is drawn to the concluding remarks of the Chief Engineer for Irrigation in the foregoing note.

4. Ordered that a copy of these proceedings be forwarded for the information of the Government of India with reference to their circular, No. XXI, Public Works, dated 13th December 1882.

(Here enter No. 580 I., dated 4th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To Superintending Engineers.
To the Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.
,, Revenue Department.

ENDORSEMENT—dated 4th July 1885, No. 580 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt: of {1885} Madras.

PUBLIC WORKS.

Dated July, 4th.

Recd. *Encl.*

G.O., 4th July 1885, No. 580 I.

JULY.

Irrigation and Navigation and Agricultural Works

Forwarding copy of proceedings on note by the Chief Engineer for Irrigation, submitting statement showing the grants and expenditure on — during 1884-85.

GOVERNMENT OF MADRÁS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following letter from J. B. PENNINGTON, Esq., Collector of Tanjore, to the Secretary to Government, Public Works Department, dated Vallam, 25th June 1885, No. 3885 :—

I have the honor to state that a piece of land, measuring $3\frac{3}{16}$ cents, in Kumbakónam town, was taken up in excess of 4 acres and 65 cents declared in the *Fort St. George Gazette* of the 30th November 1883 to be required for the improvement of the Arasillár bank, south of Kumbakónam. This excess was not acquired either by private negotiation or under the provisions of the Act. As it is desirable, in order to ensure to Government an indefeasible title to it, to acquire the land under the provisions of the Act, I herewith forward a draft declaration, under section 6 of the Act, that it is needed for a public purpose, and request that you will be good enough to order the same to be published in the *Fort St. George Gazette*.

ORDER—dated 6th July 1885, No. 581 I., Public Works.

Ordered that the notification be published in the *Fort St. George Gazette*.

2. The Collector of Tanjore will take order for the acquisition of the land in accordance with the provisions of Act X of 1870.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Revenue Department.

IRRIGATION.

Govt. of (1885) Madras.

PUBLIC. WORKS.

Dated July, 6th.

Recd. *Encl.*

G.O., 6th July 1885, No. 581 I.

JULY.

Land

Orders issued for acquisition of certain — required for the improvement of the Arasillár bank, Tanjore district.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following papers:—

Proceedings of the Board of Revenue, dated 16th May 1885, Mis. No. 4526.

Read—letter from the Acting Collector of Bellary, to the Secretary to the Board of Revenue, dated 9th May 1885, No. 1588.

Resolution—dated 16th May 1885, Mis. No. 4526.

Submitted for the sanction of Government.

(True Extract.)

(Signed) E. GIBSON,
Secretary.

Proceedings of the Board of Revenue, dated 1st June 1885, No. 1599.

Read—the following official memorandum from the Acting Secretary to Government, Revenue Department, to the Secretary to the Board of Revenue, dated Ootacamund, 26th May 1885, No. 286:—

The undersigned is directed to request that, when submitting estimates for the repair of tanks, the Board will be pleased invariably to state whether the work is an Imperial or a Minor irrigation work. It is requested that this information may be furnished as regards the work for which an estimate is submitted with Board's proceedings, dated 16th May 1885, Mis. No. 4526.

Resolution—dated 1st June 1885, No. 1599.

Communicated to the Collector of Bellary, who will afford the required information.

(A true Copy and Extract.)

(Signed) E. GIBSON,
Secretary.

Proceedings of the Board of Revenue, dated 13th June 1885, Mis. No. 5525.

Read—the following letter from the Collector of Bellary, to the Secretary to the Board of Revenue, dated 10th June 1885, No. 1951:—

With reference to Board's proceedings, No. 1599, of the 1st instant, I have the honor to inform you that the Halharvi tank is a major irrigation work, its ayacut being 261 acres and 35 kuntas, assessed at Rs. 1,599-6-0.

Resolution—dated 13th June 1885, Mis. No. 5525.

Submitted for the information of Government.

(A true Copy and Extract.)

(Signed) E. GIBSON,
Secretary.

Mis. No. 3066, Revenue.

The plan and estimates received with Board's proceedings, Mis. No. 4526, dated 16th May 1885, will be transferred to the Public Works Department for disposal.

OOTACAMUND,
15th June 1885.

(Signed) W. WILSON,
Ag. Secretary to Government.

ORDER—dated 6th July 1885, No. 582 I., Public Works.

Communicated to the Superintending Engineer, III Circle, who will sanction, in the ordinary course, the estimate, amounting to Rs. 1,454, for repairing the bund of the Halharvi tank, of the Adoni taluk, of the Bellary district, the work being put in hand when the necessity arises.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle, with six enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 6th.

Recd. *Encl.*

G.O., 6th July 1885, No. 582 I.

JULY.

Halharvi Tank, Bellary District

Estimate for repairing the bund of the —, forwarded to the Superintending Engineer, with instructions.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from Lieut.-Colonel H. R. MEAD, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Ramnad, 20th June 1885, No. 156 T.N.:—

With reference to your telegram dated 17th June, asking me to wire the amounts that can be spared from the existing grants of the Cauvery and Vennár regulators and Srívaikuntham anicut under Capital, I have the honor to report that, unless the grant for the Cauvery and Vennár regulators can be considerably increased, I shall not be able to authorise the Executive Engineer to order the shutters, gearing, &c., for the works, and they will not be in working order next season.

2. With regard to Srívaikuntham anicut, as you are aware, it is proposed to utilise the grant of Rs. 30,000 in altering the weir and putting falling shutters in it so as to make the important Korampallam tank safe; four of these vents are now in progress and should be soon completed. I proposed to reserve Rs. 12,000 for this work and for preparation of materials for the remaining vents this official year, and to give up Rs. 18,000, asking that this amount, and probably more, should be added to the grant for the Cauvery and Vennár regulators. If this is sanctioned, I hope that the Cauvery and Vennár regulators may be practically completed next season, say by 1st July 1886; and as it is most important that these works should be carried on to completion now that we have Mr. Peters and his staff on the spot, I trust that this transfer may be sanctioned, and that no money may be transferred from this circle.

ORDER—dated 9th July 1885, No. 592 I., Public Works.

It was anticipated that the amount not required for the Srívaikuntham anicut project would be available for transfer to the Sangam anicut project; but, as the Superintending Engineer reports that the amount is required for expenditure on the Cauvery and Vennár regulators, the following transfers of funds are sanctioned:—

Productive Public Works.
Capital Account.

From Srívaikuntham Anicut Project.	RS.	*To* Cauvery and Vennár Regulators.	RS.
Works	18,000	Works	18,000
Establishment	4,140	Establishment	4,140
Total ...	22,140	Total ...	22,140

2. The Superintending Engineer will report the component works of the Cauvery and Vennár regulators project on which the additional allotment of Rs. 18,000 will be utilised.

3. The Superintending Engineers, I and II Circles, will report whether any and, if so, what portion of the existing grants for the Godávari and Kistna deltas under Productive Public Works, Capital Account, can be spared for transfer to the Sangam anciut project.

4. Ordered that a copy of these proceedings be forwarded to the Government of India for information.

(Here enter No. 593 I., dated 9th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—dated 9th July 1885, No. 593 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated July, 9th.

Recd. *Encl.*

G.O., 9th July 1885, No. 593 I.

JULY.

Transfer of Funds

Forwarding copy of orders sanctioning a — from the Srívaikuntham anicut project to the Cauvery and Vennár regulators, and calling for proposals for a — from grants for the Godávari and Kistna deltas to the Sangam project.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 298 S.G.

REPORT on estimates, amounting to Rs. 3,315, for drainage culverts and other works connected with the diversion of the Dorenal road at bridge in 4th mile of Kanigiri main canal, Sangam project.

In the estimate of Rs. 26,083 for the bridge at 4th mile of main canal, sanctioned in G.O., No. 205 I., of the 3rd March 1883, an item of Rs. 2,840 was provided for the diversion of the road rendered necessary by the construction of the bridge.

2. The work was completed in January 1884, but was not taken over by the Local Fund Board. When I was at Sangam in December 1884, I found that the work, as completed, was objected to by the Local Fund Engineer, and that there had been a great deal of correspondence between the President of the Board and Captain Campbell, R.E. The diversion was in very bad order. It was represented to me as having been almost impassable, and was, at the time of my inspection, being repaired under the orders of the Local Fund Engineer.

3. The correspondence showed that the road had not really been completed in accordance with the estimate, as gravel had been used where metal was allowed for, and the gradient of the approaches of the bridge over the Duvvúr channel was much too steep, instead of being made 1 in 20 as specified for. The road had been considerably damaged by flood water during the heavy rains of the preceding October and November, and it was evident that culverts to prevent the accumulation of water between the road and the main canal would have to be built, as the original estimate contained no such provision.

4. Captain Campbell was absent on privilege leave at the time of my visit, but after discussing the whole matter with the officer in charge of the division, Mr. Malet, and with the President, I arranged (1) that we should repay to the Local Fund Board the sum they were spending in making up the road surface; (2) that we should construct the necessary cross drainage, and (3) that we should remake the approaches of the Duvvúr channel bridge with proper gradients.

5. For item (1), an estimate of Rs. 560, based on information supplied by the Local Fund Engineer, is included in the present estimate.

6. For item (2), it is necessary to construct not only two culverts, one east and one west of Duvvúr channel, but also a syphon culvert under the same channel. The culvert west of the channel and the syphon have to carry the drainage of a considerable tract between the road and the main canal; the culvert east of the road only drains a small area between the channel, the road, and the bridge. No sketch map illustrative of what was proposed accompanied the estimates. I accordingly called for one; but the sketch map sent up is not very clear, but will, I trust, enable the proposals and the positions of the works to be understood.

7. The designs prepared by the Executive Engineer are suitable. It was first proposed to carry the drainage to be passed from the west of the road across the channel by an iron trough; but on working out the designs, a syphon culvert was found to be the cheapest arrangement.

8. The whole cost of the second item is Rs. 2,340.

9. The cost of the third item for relaying the approaches of the Duvvúr channel bridge is Rs. 415.

10. The original estimate should have included the cost of maintaining the road for one season, and also the requisite cross drainage works; but had the road been properly made in the first instance, the expenditure under (1) would have been less, and (3) would not have been required at all.

11. As the works now estimated for are required before the Local Fund Board will take over the road diversion, I trust the estimate may be sanctioned and funds allotted from the item for unforeseen works.

12. There has been delay in preparing these estimates, which I believe to be due to the pressure of work in the Sangam division office.

COMMAMUR CANAL,
22nd June 1885.

(Signed) J. W. RUNDALL,
Superintending Engineer, II Circle.

ORDER—dated 9th July 1885, No. 594 I., Public Works.

The estimate, amounting to Rs. 3,315, for completing the diversion of the Dorenal road at the bridge in the 4th mile of the Kanigiri main canal, Sangam anicut project, is sanctioned in supersession of the provision for this work of Rs. 2,840 in the estimate of Rs. 26,083 sanctioned in G.O., No. 205 I., dated 3rd March 1883, for constructing a bridge in the 4th mile of the Kanigiri main canal, the excess of Rs. 475 being met from the balance of the lump sum provision in the Sangam anicut project estimates for unforeseen works, which will then be reduced to Rs. 33,470.

2. This sanction has been registered as No. 82 I. of 1885-86, and classified as shown below:—

N. Productive Public Works.
Capital Account.
Sangam Anicut Project.
I. Works.
(2) Main Canals and Branches.
Kanigiri Canal.
G. Bridges.
Completing the diversion of the Dorenal road, Estimate... ... Rs. 3,315

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with five enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with duplicate abstract estimate.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 9th.

Recd. *Encl.*

G.O., 9th July 1885, No. 594 I.

JULY.

**Dorenal Diversion Road,
Sangam Project**

Estimate for completing the —, at the bridge in the 4th mile of the Kanigiri main canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Western Delta, Main Canal, 20th June 1885, No. 290 S.G.:—

I have the honor to forward, herewith, a completion report for maintenance of temporary buildings, forwarded by the Executive Engineer, Sangam Project division, on which there is an excess of Rs. 63-12-10.

2. The Executive Engineer explains that the excess is due to the payment to the assistant apothecary of Rs. 149-3-11 as compensation in lieu of quarters, as sanctioned in G.O., No. 693 I., of the 30th July 1884. When the Executive Engineer knew that in consequence of this payment the sanctioned estimate would be exceeded, he should have submitted a revised one; but under the circumstances, I request the Examiner may be authorised to admit the charge.

ORDER—dated 9th July 1885, No. 595 I., Public Works.

The Examiner of Public Works Accounts is authorised to accept the completion report forwarded with the foregoing letter for the maintenance of the temporary buildings connected with the Sangam anicut project, the excess expenditure of Rs. 64 incurred on the work being met from the balance of Rs. 126 shown to be available under the sub-head K, Buildings in G.O., No. 539 I., dated 19th June 1885. The balance still available under this head is Rs. 62.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts, with one completion report.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 9th.

Recd. *Encl.*

G.O., 9th July 1885, No. 595 I.

JULY.

Temporary Buildings at Sangam

The Examiner to accept the completion report for the maintenance of the —, and the excess expenditure of Rs. 64 on the work authorised.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following letter from H. M. WINTERBOTHAM, Esq., Acting Collector of Tinnevelly, to the Secretary to Government, Public Works Department, dated 30th June 1885, No. 117 :—

In continuation of Mr. Lee-Warner's letter, dated 9th February 1885, No. 28, I have the honor to report that all endeavours to come to an amicable settlement with the villagers of Sédhukkuvaithán and Chokkapalangarai for the acquisition of the land required for the new flood-bank of the Támbraparni have proved futile, and it is therefore necessary that the land should be acquired under Act X of 1870. To this end, I have the honor to forward a draft declaration in the form required by section 6 of the Act, which I request may be approved and published in the *Fort St. George Gazette*. I also forward a plan and schedule of the land for inspection and return. As the land is a long narrow strip, it is impossible to describe it verbally by boundaries. The extent required for permanent occupation and for excavating earth for the bank is shown in the following statement :—

Village.	Extent to be taken up for flood-bank		Extent required for digging earth.		Total.	
	ACS.	CTS.	ACS.	CTS.	ACS.	CTS.
Sédhukkuvaithán	11	88	21	96	33	84
Chokkapalangarai	7	50	17	20	24	70
Total ...	19	38	39	16	58	54

Order—dated 10th July 1885, No. 597 I., Public Works.

Ordered that the notification be published in the *Fort St. George Gazette*.

2. The Collector of Tinnevelly will take order for the acquisition of the land in accordance with the provisions of Act X of 1870.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Revenue Department, with two enclosures, to be returned to the Collector of Tinnevelly.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 10th.

Recd. *Encl.*

G.O., 10th July 1885, No. 597 I.

JULY.

Land

Orders issued for the acquisition of the — required for the new flood-bank of the Támbraparni.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

G.O., dated 4th July 1885, No. 3413, Revenue.

Read—the following office note from the Chief Engineer for Irrigation, dated 29th June 1885, No. A.:—

Abstract.—Requesting that at least Rs. 50,000 may be spared for Imperial irrigation works from the allotment for minor irrigation.

Order—dated 4th July 1885, No. 3413, Revenue.

The grant for minor irrigation works will accordingly be reduced by Rs. 50,000, which will be placed at the disposal of the Public Works Department, Irrigation Branch. The Board will redistribute the grant as now reduced, which will be Rs. 2,75,000.

(True Extract.)

(Signed) W. WILSON,
Ag. Secretary to Government.

Order—dated 10th July 1885, No. 598 I., Public Works.

Communicated to the Chief Engineer for Irrigation for information.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 10th.

Recd. *Encl.*

G.O., 10th July 1885, No. 598 I.

JULY.

Minor Irrigation Works

Orders, in the Revenue Department, reducing the grant for —, communicated to the Chief Engineer for Irrigation.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 25th June 1885, No. 648 G.D.

With reference to your telegrams as per margin, I have the honor to submit, herewith, a revised schedue A for the reduced grant under Capital Account, Godávari delta system.

Dated 11th and 13th May 1885.

2. The budget grant for works under Capital Account of the Godávari delta system is Rs. 3,16,222 and the grant withdrawn is Rs. 81,300. The revised schedule now submitted is for Rs. 2,34,922.

ENCLOSURE.

REVISED Schedule A, showing the Component Works for the reduced grant under Capital Account, Godávari district—*vide* Chief Engineer's telegram dated 11th May 1885.

Item Number.	Main Head.	Name of Canal.	Sub-head.	Individual Works.	Amount of Estimate.	Outlay To end of 1883-84.	Outlay During 1884-85.	Grant, 1885-86.	Item Total.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS. CAPITAL ACCOUNT.	RS.	RS.	RS.	RS.	RS.
				51. IRRIGATION AND NAVIGATION.					
				GODAVARI DELTA SYSTEM.					
				Eastern Section.					
	Head Works ...	......	C. Works ...	Bobberlanka under-sluice improvements...	6,300	...	3,723	3,300	3,300
1	(3) Distributaries	Cocanada canal...	Do. ...	Head-sluice, &c.	27,959	25,355	284	1,300	
			L. Earthwork ...	Minor channels	13,853	12,784	465	1,000	2,300
2	Do. ...	Sámalkót do. ..	C. Works ...	Head-sluice, &c.	17,302	15,408	2,501	390	390
3	(2) Main canals and branches.	Bank do....	B. Land ...	Compensation for land	7,550	3,139	2,702	1,900	1,900
4	(3) Distributaries.	Mandapetta do.	C. Works ...	Head-sluice, &c.	10,784	6,973	2,984	110	110
5	Do. ...	Coringa do.	B. Land ...	Compensation for land	1,800	1,777	78	300	
			C. Works ...	Head-sluice, &c.	18,989	13,504	2,201	2,800	
			L. Earthwork ...	Earthwork	7,731	6,070	...	700	3,800
6	Do. ...	Ingeram do.	C. Works ...	Head-sluices, &c.	8,670	3,309	2,919	2,400	2,400
7	(4) Drainage and protective works.	Tooliabhaga drain	Do. ...	Masonry works	17,764	12,065	3,001	3,000	
			L. Earthwork ...	Improvements	1,18,504	1,01,025	2,124	3,900	6,900

8	Do. ...	Biccavole drain...	C. Works ...	Masonry works	9,170	6,801	367	1,000	
			L. Earthwork ...	Improvements	58,700	47,061	2,672	4,100	5,100
9	Do. ...	Teki drain ...	B. Land ...	Compensation for land	12,897	5,129	141	2,000	
			C. Works ...	Masonry works	15,089	7,489	670	4,100	
			L. Earthwork ...	Main and minor drains	2,16,289	1,77,365	7,925	13,000	19,100
				Total, Eastern Section ...	...	...	...	...	45,300
				Central Section.					
1	(2) Main canals and branches.	Main canal ...	L. Earthwork ...	Improvements to main canal	39,000	815	559	5,000	5,000
2	Do. ..	Gunnaram canal.	B. Land ...	Compensation for land	2,310	253	600	1,000	
	Do. ...	Do. ...	F. River and hill torrent works.	Improvements to Gunnaram aqueduct.	21,700	...	18,060	3,300	
	Do. ...	Do. ...	I. Navigation ...	Sivakodu lock constructing	19,660	...	976	10,000	
	Do. ...	Do. ...	Do. ...	Do. lock weir constructing ...	2,750	...	2,052	700	
	Do. ...	Do. ...	Do. ...	Mondepulanka lock do. ..	19,500	...	17,439	1,000	
				Quarters for lock establishment ...	5,020	...	2,060	180	
	Do. ...	Do. ...	L. Earthwork ...	Improvements to the canal	1,15,600	33,463	13,940	6,550	
	(3) Distributaries.	Do. ...	C. Works ...	Masonry sluices	16,350	1,111	1,560	3,000	
	Do. ...	Do. ...	L. Earthwork ...	Various channel improvements ...	5,000	...	...	2,000	27,740
3	(2) Main canals and branches.	Bank canal ...	B. Land ...	Compensation for land	900	...	281	200	
	Do. ...	Do. ...	F. (1) Other cross drainage works.	Vuchili drain inlet and other inlets ...	5,010	722	680	1,000	
	Do. ..	Do. ...	I. Navigation ...	Lolla lock constructing	17,550	...	16,239	1,000	
	Do. ...	Do. ...	Do. ...	Vadapalem lock constructing	17,100	...	9,115	7,000	
	Do. ...	Do. ...	Do. ...	Do. lock weir do.	4,470	...	1,750	1,400	
	Do. ...	Do. ...	Do. ...	Chintallanka lock do.	19,000	...	5,613	7,000	
	Do. ...	Do. ...	Do. ...	Do. lock weir do.	3,830	...	855	2,000	
	Do. ...	Do. ...	Do. ...	Quarters for lock establishment ...	2,080	..	700	500	
	Do. ...	Do. ...	L. Earthwork ...	Improvements to the canal	53,320	225	4,996	10,000	30,100
4	Do. ...	Amalapúr canal.	B. Land ...	Compensation for land	120	...	50	120	
	Do. ...	Do. ...	H. Escapes ...	Ralli surplus weir constructing ...	10,200	...	...	5,000	

Revised Schedule A, showing the Component Works for the reduced grant under Capital Account, Godávari district, &c—*cont.*

Item Number.	Main Head.	Name of Canal.	Sub-head.	Individual Works.	Amount of Estimate.	Outlay: To end of 1883-84.	Outlay: During 1884-85.	Grant, 1885-86.	Item Total.
					RS.	RS.	RS.	RS.	RS.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS—cont.					
				CAPITAL ACCOUNT—*cont.*					
				51. IRRIGATION AND NAVIGATION—*cont.*					
				GODAVARI DELTA SYSTEM—*cont.*					
				Central Section—cont.					
	(2) Main canals and branches.	Amalapur canal	I. Navigation ...	Pallivella lock improvements ...	2,430	...	...	1,000	
	Do. ...	Do. ...	Do. ...	Chintalapudi lock constructing ...	18,250	...	10,745	6,000	
	Do. ...	Do. ...	Do. ...	Do. lock weir do. ...	3,740	...	2,330	1,240	
	Do. ...	Do. ...	Do. ...	Quarters for lock establishment at Pallivella	1,040	...	...	540	
	Do. ...	Do. ...	Do. ...	Quarters for lock establishment at Chintalapudi	860	...	120	730	
	Do. ...	Do. ...	L. Earthwork ...	Improvements to the canal	87,150	16,426	26,954	30,000	
	(3) Distributaries	Do. ...	C. Works ...	Masonry sluices	8,820	...	3,500	3,000	
	Do. ...	Do. ...	L. Earthwork ...	Various channel improvements ...	5,000	...	...	2,000	49,630
5	(2) Main canals and branches.	Bendamurlanka canal.	I. Navigation ...	Indupalli lock constructing	20,170	4	...	10,000	
	Do. ...	Do. ...	Do. ...	Do. lock weir improvements ...	1,300	...	...	1,300	
	Do. ...	Do. ...	Do. ...	Quarters for lock establishment at Indupalli	860	...	...	630	
	Do. ...	Do. ...	L. Earthwork ...	Improvements to the canal	9,000	...	...	2,000	13,930
6	(4) Drainage and protective works.	Gorinkala drain.	Do. ...	Gorinkala drain improvements ...	30,433	8,217	9,990	6,000	6,000

7	Do. ...	Lower Kowsika drain.	Do. ...	Lower Kowsika drain improvements...	57,340	17,839	24,617	9,000	9,000
8	Do. ...	Kunaram drain.	Do. ...	Kunaram drain improvements ...	19,300	5,000	4,267	10,000	10,000
				Total, Central Section ...	...	...	...	...	1,51,400
				Western Section.					
1	(3) Distributaries.	Kakaraparru canal.	B. Land ...	Compensation for land for Kavalipuram channel	540	...	11	250	250
2	(2) Main canals and branches.	Gostanadi and Velpur canal.	Do. ...	Compensation for improving Gostanadi bends	1,200	372	63	350	
			I. Navigation ...	Quarters for lock establishment ...	2,210	1,554	274	350	
	(3) Distributaries.	...	B. Land ...	Compensation for land	1,290	...	494	350	
			C. Works ...	Minor masonry works	17,472	10,544	2,503	300	1,350
3	(2) Main canals and branches.	Extension of Velpur canal.	B. Land ...	Compensation for land	2,900	2,430	276	100	
			F. (1) Other cross drainage works.	Two drainage works	3,100	...	1,895	1,200	
			I. Navigation ...	Bhímavaram tidal lock	24,500	...	9,830	2,500	
				Vissakodér lock	18,600	17,238	362	500	
				Quarters for lock establishment ...	2,480	860	190	500	
	(3) Distributaries.	...	C. Works ...	Minor masonry works	2,570	1,122	619	800	5,600
4	(2) Main canals and branches.	Bank canal ...	I. Navigation ...	Fender pile bridge in front of surplus weir at 2nd mile into Nakkala ...	255	...	...	100	
	Do. ...	Do. ...	Do. ...	Quarters for lock establishment ...	3,720	1,390	1,468	800	
	(3) Distributaries.	...	B. Land ...	Compensation for land	1,050	...	428	300	
			C. Works ...	Minor masonry works	6,978	4,350	1,730	900	
			L. Earthwork ...	Minor channels	9,746	6,082	964	1,700	3,800
5	Do. ...	Narsápur canal.	B. Land ...	Compensation for land	1,350	1,156	...	100	
			C. Works ...	Ramasétuva sluice	550	...	217	300	400
6	(2) Main canals and branches.	Ellore canal ...	F. River and hill torrent work.	Under-tunnels	13,714	11,193	1,215	1,300	

Revised Schedule A, showing the Component Works for the reduced grant under Capital Account, Godávari district, &c.—*cont.*

Item Number.	Main Head.	Name of Canal.	Sub-head.	Individual Works.	Amount of Estimate.	Outlay: To end of 1883-84.	Outlay: During 1884-85.	Grant, 1885-86.	Item Total
					RS.	RS.	RS.	RS.	RS.
				N. EXPENDITURE ON PRODUCTIVE PUBLIC WORKS—cont.					
				CAPITAL ACCOUNT—*cont.*					
				51. IRRIGATION AND NAVIGATION—*cont.*					
				GODAVARI DELTA SYSTEM—*cont.*					
				Western Section—cont.					
	(2) Main canals and branches.	Ellore canal—*cont.*	F. (1.) Other cross drainage works.	Outlet at Pulla	845	...	791	50	
			H. Escapes ...	Fitting escapes with shutter	8,580	...	392	5,000	6,350
7	Do. ...	Attili canal ...	I. Navigation ...	Quarters for lock establishment ...	2,495	370	121	500	500
8	Do. ...	Junction canal..	Do. ...	Do. do.	1,560	1,012	289	250	250
9	Do. ...	Venkiah and Wyeru canal.	Do. ...	Do. do.	4,765	1,627	1,278	1,200	
	(3) Distributaries.	Do. ...	B. Land ...	Compensation for land	500	150	93	150	
			C. Works ...	Minor masonry works	21,060	6,459	4,222	2,500	
			L. Earthwork ...	Minor channels	8,219	4,171	1,927	550	4,400
10	(2) Main canals and branches.	Undi canal ...	I. Navigation ...	Quarters for lock establishment ...	2,680	1,073	1,051	550	
	(3) Distributaries.		B. Land ...	Compensation for land	1,350	785	169	200	
			C. Works ..	Minor masonry works...	29,868	10,187	4,278	2,500	
			L. Earthwork ...	Minor channels	34,053	17,952	4,809	3,500	
	(4) Drainage and protective works.		C. Works ...	Minor masonry works...	6,320	407	955	200	
									6,950

11	Do. ...	Gonter drain ...	B. Land ...	Compensation for land	2,000	834	...	550	
			L. Earthwork ...	Improvements to Barsavarowkodu ...	5,116	...	...	4,000	4,550
12	Do. ...	Yenamaduru do.	C. Works ...	Bavanikodu inlet	3,000	929	1,565	500	500
13	Do. ...	Baggeswaram do.	B. Land ...	Compensation for land	650	142	...	200	
			L. Earthwork ...	Improvements to lower portion ...	9,600	7,098	769	621	821
14	Do. ...	Minor drain ...	Do. ...	Irlakodu drain	9,000	591	4,451	2,500	2,500
				Total, Western Section ...	...	...	...	...	38,221
				Total, Godávari Delta System ...	...	...	...	...	2,34,921

Dowlaishweram,
25th June 1885.

(Signed) W. A. MATHEWS, Asst. Engr.,
for Superintending Engineer, I Circle.

No. 123 I.

Submitted to Government with a recommendation that the revised schedule A, showing the distribution of the reduced grant for the current year for the Godávari delta system under "Capital Expenditure on Irrigation Works not charged against Revenue," or "Productive Public Works, Capital Account," as it has hitherto been called, may be sanctioned.

2. The amount applied for for the Baggeswaram drain under L. Earthwork has been reduced from Rs. 622 to Rs. 621 in order to make the total agree with the reduced grant for works shown in G.O., No. 453 I., dated 16th May 1885.

OOTACAMUND, (Signed) J. O. HASTED, Colonel, R.E.,
8th July 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 11th July 1885, No. 599 I., Public Works.

The revised schedule A, showing the distribution of the reduced grant for the Godávari delta under "Capital Expenditure on Irrigation Works not charged against Revenue," is sanctioned in supersession of the corresponding portion of the schedule A printed in the current year's budget estimate.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 11th.

Recd. *Encl.*

G.O., 11th July 1885, No. 599 I.

JULY.

Godavari Delta

Revised schedule A, showing the distribution of the reduced grant for the — under "Capital Expenditure on Irrigation Works not charged against Revenue," sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following letter from J. GROSE, Esq., Collector of Nellore, to the Secretary to Government, Public Works Department, Irrigation Branch, dated Nellore, 2nd July 1885, No. 3413:—

I have the honor to forward, herewith, for publication in the *Fort St. George Gazette*, a draft declaration and schedule, under section 6 of Act X of 1870, for lands required for the southern channel and the flood embankment, Sangam project, in the village of Murivarty, Nellore taluk.

2. The special deputy collector, I. Sarabhalingam Naidu, may be authorised to take order for the acquisition of the lands.

Order—dated 13th July 1885, No. 600 I., Public Works.

Ordered that the declaration be published in the *Fort St. George Gazette*.

2. Special Deputy Collector I. Sarabhalingam Naidu will take order for the acquisition of the lands in accordance with the provisions of Act X of 1870.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
,, Chief Engineer for Irrigation.
,, Revenue Department.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 13th.

Recd. *Encl.*

G.O., 13th July 1885, No. 600 I.

JULY.

Lands

Orders for acquisition of — required for the southern channel and the flood embankment, Sangam project.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 22nd June 1885, No. 625 G.D.

I have the honor to submit, herewith, for sanction, eleven revised estimates, under Capital Account, together with a comparative statement, for lock establishment quarters in the Godávari Eastern division as detailed below. The amount of the revised estimates exceeds the original estimates by Rs. 3,480. The division officer says that this excess can be met from the saving of Rs. 13,279 effected on the new cut below the end of Injeram canal, Teki drain (estimate Rs. 60,800). The cause of excess over the original estimates is explained in the Remark column of the comparative statement.

Names of Works.	Amount. RS.
1. Quarters for lock establishment at Kovur	1,650
2. Do. do. at Chopulla	980
3. Do. do. at Kowlaishweram	1,050
4. Do. do. at Kulla	1,100
5. Do. do. at Maskapalli	1,190
6. Do. do. at Cocanada	1,450
7. Do. do. at Pasalapúdi	1,250
8. Do. do. at Alamúr	1,460
9. Do. do. at Vella	1,630
10. Do. do. at Munjair	1,740
11. Do. do. at Yerapothavaram	1,420
Total ...	14,920

Office note to the Examiner, Public Works Accounts, dated 30th June 1885, No. 195.
„ from „ „ „ „ „ 4th July „ „ 245.

Order—dated 15th July 1885, No. 602 I., Public Works.

The following revised estimates, aggregating Rs. 14,920, for constructing lock establishment quarters in the Godávari Eastern division, are sanctioned in supersession of the provision of Rs. 11,440 made for them in the completion estimates of the Godávari delta system, the excess of Rs. 3,480 being met from the saving of Rs. 13,279 effected on the new cut below the end of the Injeram canal, Teki drain, Godávari Eastern division. The unappropriated amount of the saving, viz., Rs. 9,799,

will be added to the balance of the provision available for unforeseen works of the Godávari delta system, which will then be increased to Rs. 10,950 :—

N. Capital Expenditure on Irrigation Works not charged against Revenue.

51. Irrigation and Navigation.

Godávari Delta System.

(1) Works.

I. Navigation.

Constructing lock establishment quarters at—	RS.
Kovur lock, Cocanada canal	1,650
Chopulla lock, Bank canal	980
Kowlaishweram lock, Bank canal	1,050
Kulla lock, Bank canal	1,100
Maskapalli lock, Bank canal	1,190
Cocanada lock, Sámalkót canal	1,450
Pasalapúdi do. Mundapettah canal	1,250
Alamúr do. Coringa canal	1,460
Vella do. do. do.	1,630
Munjair do. do. do.	1,740
Yerapothavaram lock and terminal weir, Injeram canal	1,420
Total ...	14,920

2. This sanction has been registered as No. 83 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with twelve enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with duplicate comparative statement.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras

PUBLIC WORKS.

Dated July, 15th.

Recd. *Encl.*

G.O., 15th July 1885, No. 602 I.

JULY.

Lock Establishment Quarters in the Godavari Eastern Division

Revised estimates for —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from Lieutenant-Colonel H. R. MEAD, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Devipatam, 25th June 1885, No. 162 T.N. :—

In continuation of my letter, No. 156 T.N., dated 20th instant, I have the honor to request that the following modification of grants may be sanctioned as soon as possible :—

Irrigation and Navigation.
Productive Public Works.
Capital Account.

Increase.	RS.	*Reduction.*	RS.
Cauvery and Vennár Regulator Division.		Tinnevelly Division.	
(2) Under-tunnel or syphon, item No. 3 of 1885-86 budget ...	8,492	(1) Korampallam tank surplus works, item No. 64 of 1885-86 budget.	22,000
(3) Sluice in the L.B. of Vennár new cut, estimate Rs. 1,950.	1,363		
(4) Pillai voikal head-sluice, item No. 63 of 1885-86 budget ...	623		
(5) Grand anicut alterations, estimate Rs. 55,950	11,522		
Total ...	22,000		

Explanation of necessity for re-appropriation.

(1) Not reported to be required at present.
(2), (3) and (4) Required for completing the works during the official year.
(5) Required for experimental shutters for prosecution of alterations; more funds will be applied for later in the year.

ORDER—dated 16th July 1885, No. 608 I., Public Works.

As Rs. 18,000 have already been transferred in G.O., No. 592 I., dated 9th July 1885, from the grant for the Srívaikuntham anicut system to that for the Cauvery and Vennár regulators, the following transfers of funds are sanctioned :—

Productive Public Works. Capital Account.

From Srívaikuntham Anicut System.	RS.	*To* Cauvery and Vennár Regulators.	RS.
Works	4,000	Works	4,000
Establishment	920	Establishment	920
Total ...	4,920	Total ...	4,920

2. Ordered that a copy of these proceedings be forwarded to the Government of India for information.

(Here enter No. 609 I., dated 16th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

ENDORSEMENT—dated 16th July 1885, No. 609 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated July, 16th.

Recd. *Encl.*

G.O., 16th July 1885, No. 609 I.

JULY.

Funds

Forwarding copy of a proceedings sanctioning certain transfers of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

Endorsement of the Madras Government, Financial Department, dated 29th May 1885, No. 96, on letter No. 44, dated 19th May 1885, from the Collector of Madura.

From Lieutenant-Colonel H. R. MEAD, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Ramnad, 28th June 1885, No. 174 M.D.

With reference to your endorsement, No. 1052 C., dated 13th June 1885, I have the honor to return the papers and to report that, as I was proceeding to Madura, I thought best to again inspect the place before again reporting on the subject.

2. I am quite willing to accept Mr. Crole's rough sketch, and think that the explanation, that the Vaigai water came over the road, called in the sketch Valayapatti road, south and west of the head of the Anapanadi channel into the nunjah fields south of the channel, will explain the matter. It was this water passing chiefly through the road bridge south of the channel under the railway, and partly through the culvert in the railway built for the passage of the channel water, that damaged the road beyond and a small portion of the town.

3. If this road west of the railway was raised slightly, and so made into a flood-bank, the damage done would have been much lessened. As about 300 yards east of the head of the channel there is a culvert across the channel, shown in the sketch marked in pencil with a cross, with a water-way of about 30 square feet only, I cannot agree with Mr. Crole in his opinion that a bank 183 yards in length, as shown in his sketch (1, 2 in red), and a head-sluice at 1 is what is required, and that it should be carried out at Government cost.

This head-sluice and bank would be always liable in extraordinary floods to be turned by water passing round it to the westward.

4. With regard to paragraph 2 of Mr. Crole's letter, I have to point out that the "another channel" referred to is shown in his sketch. Its head is east of the causeway; it is called Panayur channel, and is marked by me in pencil thus *. It is true that in the last flood there was little or no damage from this channel; but as it has an open head and passes through municipal limits, if Mr. Crole's ideas are correct, the municipality would have a right to call on Government to head-sluice it at any time.

5. I see no necessity to remark on the other points of Mr. Crole's letter, except on the best form in which he gives his opinion that the municipality by taking legal measures would compel Government to execute protective works to the town. Mr. Crole gives no reason for this opinion, and I fail to understand how this can be the case when Madura has for years existed with this channel with an open head.

No. 127 I.

Note by the Chief Engineer for Irrigation.

The Superintending Engineer's letter explains the points which the Collector considered incomprehensible in his letter printed with G.O., No. 321 I., dated 26th March 1885.

2. The Superintending Engineer has again inspected the locality, and has satisfied himself that the principal damage to the town of Madura was caused by the river spilling over the Valayapatti road above the Anapanadi channel head, and this water passing through the road bridge, and also through the channel bridge, under the railway; and not, as supposed by the Collector, by the spill below the head of the channel.

3. The Superintending Engineer further explains that the construction of a head-sluice to the channel is not a matter of so much importance as might be supposed, inasmuch as about 300 yards below the head of the channel there is a culvert across the channel which limits the quantity of water that passes down in the direction of the town.

4. The river Vaigai has apparently never been embanked, and it is only in extreme floods that the town is liable to damage from the spill. The remedy, as pointed out by the Superintending Engineer, seems to be the raising of the Valayapatti road west of the railway, slightly, so as to form a flood-bank. With this professional opinion before them and the order in this department already quoted, the municipal council will doubtless be able to deal with the matter.

Ootacamund,
6th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 18th July 1885, No. 610 I., Public Works.

Recorded in continuation of G.O., No. 321 I., dated 26th March 1885.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
" Chief Engineer for Irrigation.
" Revenue Department.
" Financial "

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 18th.

Recd. *Encl.*

G.O., 18th July 1885, No. 610 I.

JULY.

Damages

Further correspondence relating to the —, caused by floods in the Vaigai river, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the followings papers :—

G.O., dated 6th June 1885, No. 502 I., Public Works.

No. 124 I.

Note by the Chief Engineer for Irrigation.

An index map of the Buckingham canal, showing the position of works, rivers, drainages crossed, &c., on a scale of 8 miles to an inch, is herewith submitted to Government, with reference to their proceedings, No. 502 I., dated 6th June 1885.

Ootacamund,
10th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 18th July 1885, No. 615 I., Public Works.

The map submitted by the Chief Engineer for Irrigation will be forwarded to the Government of India, with reference to their letter, No. 98 I., dated 20th May 1885.

(Here enter No. 616 I., dated 18th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
,, Chief Engineer for Irrigation.

Endorsement—dated 18th July 1885, No. 616 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 18th.

Recd. *Encl.*

G.O., 18th July 1885, No. 616 I.

JULY.

Buckingham Canal

Forwarding index map of the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following letter from J. W. Rundall, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Nellore, 1st July 1885, No. 731 K.S.:—

With reference to paragraph 2 of this office letter, No. 352 C, of 23rd February last, printed with G.O., No. 242 I., of 7th March last, I have the honor to forward, herewith, for your approval and sanction of Government, an estimate, amounting to Rs. 1,615, for compensation for land taken up for the Bank canal, Kistna Eastern Section, from the balance, viz., Rs. 3,998, of the lump sum provision of Rs. 10,000, item No. 391 of the classified abstract estimate printed with G.O., No. 691 I., of 30th July 1884. This will leave a balance of Rs. 2,383.

2. This estimate is prepared to enable revised bill No. 7 of March 1885 for Rs. 1,615-0-6 being paid; Rs. 4,742 have been provided for compensation of Bank canal in the revised schedule A recently submitted for the sanction of Government.

Order—dated 18th July 1885, No. 617 I., Public Works.

The estimate, amounting to Rs. 1,615, for compensation for land taken up for the Bank canal, in the Kistna Eastern Section, is sanctioned from the balance of Rs. 3,998 of the lump sum provided in the estimate printed in proceedings of Madras Government, No. 691 I., dated 30th July 1884, for compensation for land required for that canal.

2. This sanction has been registered as No. 84 I. of 1885-86, and classified as shown below—

N. Capital Expenditure on Irrigation Works not charged against Revenue.
51. Irrigation and Navigation.
Kistna Delta System.
Eastern Section.
Bank Canal.
I. Works.
(2) Main Canal and Branches.
B. Land.
Compensation for land taken up for the Bank canal, Estimate ... Rs. 1,615.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one enclosure.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt: of {1885} Madras.

PUBLIC WORKS.

Dated July, 18*th*.

Recd. *Encl.*

G.O., 18th July 1885, No. 617 I.

JULY.

Land

Estimate for compensation for — taken up for the Bank canal, Kistna, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Nellore, 1st July 1885, No. 730 K.S. :—

I have the honor to forward, herewith, for your approval and sanction of Government, an estimate, amounting to Rs. 399, for compensation for land taken up several years ago for distributaries of the Masulipatam, Pulleru, and Ellore canals, in the Kistna Eastern Section.

2. The only reason that can be offered for the submission of estimates for old claims in batches is to avoid the several calls from the Government for explanation as to why bills have been detained by this department for some months, or else I would prefer to send in one estimate when a sufficient number of bills is received.

3. I request that this estimate may be sanctioned from the balance of the lump sum provision for unforeseen works.

ORDER—dated 18th July 1885, No. 618 I., Public Works.

The estimate, amounting to Rs. 399, for the payment of old claims for compensation for land taken up for distributaries of the Masulipatam, Pulleru, and Ellore canals, in the Kistna Eastern Section, is sanctioned from the balance of the lump sum provision in the delta completion estimates for unforeseen works, which will then be reduced to Rs. 2,48,852.

2. This sanction has been registered as No. 85 I. of 1885-86, and classified as shown below:—

N. Capital Expenditure on Irrigation Works not charged against Revenue.
51. Irrigation and Navigation.
Kistna Delta System.
Eastern Section.
I. Works.
(3) Distributaries.
B. Land.
Kistna Eastern Division.

	RS.
Masulipatam canal—	
West side channel	315
Pulleru canal—	
Kapileswarapuram channel	25
Gudiváda Division.	
Ellore canal—	
Budemeru Mapuru channel	59
Total ...	399

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one enclosure.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts, with one statement.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of [1885] Madras.

PUBLIC WORKS.

Dated July, 18*th*.

Recd. *Encl.*

G.O., 18th July 1885, No. 618 I.

JULY.

Land

Estimate for payment of old compensation claims for land taken up for distributaries of the Masulipatam, Pulleru, and Ellore canals, Kistna Eastern Section, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

Statement showing the progress of Capital expenditure on irrigation works not charged against Revenue for 1884-85.

Office note from the Examiner of Public Works Accounts, dated 22nd June 1885, No. 217.

No. 125 I.

Submitted to Government.

2. The figures representing expenditure have been verified and corrected by the Examiner of Public Works Accounts, and will probably be modified to a slight extent hereafter when the accounts for the past year have been finally closed.

3. The expenditure during the year amounted to Rs. 16,01,173, against a grant of Rs. 17,67,510, showing a short outlay of Rs. 1,66,337, due chiefly to the following circumstances :—

The amounts provided for payment of compensation for land taken up for works in the Kistna delta were not fully adjusted before the close of the year, and the prevalence of cholera retarded the progress of works in the Gudiváda and Kistna Western divisions. The expenditure incurred in England for law charges connected with the Kurnool canal, for which Rs. 10,000 were provided in the revised estimate, was not adjusted owing to the necessary advice not having reached the Examiner.

The want of skilled labor and the necessity for revising the estimates owing to insufficiency of the rates allowed therein, rendered the progress of work on the Barur tank project slow.

The grant provided for the Cauvery and Vennár regulators was not fully utilised owing to the land required for the new cut having been taken up late in the year, and to difficulty having been experienced in obtaining labor as numerous repair works, which were necessitated by the floods of December last, were in progress.

Ootacamund,
10th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 18th July 1885, No. 619 I., Public Works.

Ordered that the accompanying statement be submitted to the Government of India.

(Here enter No. 620 I., dated 18th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" " " II "
" " " III "
" " " IV "
" " " VI "
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—dated 18th July 1885, No. 620 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 18th.

Recd. *Encl.*

G.O., 18th July 1885, No. 620 I.

JULY.

Irrigation Works

Forwarding statement showing the progress of Capital expenditure on — not charged against Revenue for 1884-85.

STATEMENT SHOWING THE PROGRESS OF CAPITAL EXPENDITURE ON IRRIGATION WORKS NOT CHARGED AGAINST REVENUE FOR THE YEAR 1884-85.

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM.	RS.	RS.	RS.	RS.	
Old outlay	42,99,072	..	..	42,99,072	
(1) HEAD WORKS.					
B. Land	8,396	..	..	8,270	Land required for the Dowlaishweram station has been purchased and compensation settled.
C. Works	6,460	4,000	3,724	3,724	The Bobberlanka under-sluice improvements have been completed.
K. Buildings	47,393	4,060	3,638	46,094	Nearly completed.
Total ..	62,249	8,060	7,362	58,088	
EASTERN SECTION.					
[This report was received on the 15th May 1885.]					
(2) MAIN CANALS AND BRANCHES.					
Main Canal.					
D. Regulators	12,538	..	..	12,538	Completed.
I. Navigation works	1,400	..	..	1,247	Do.
L. Earthwork	25,394	..	..	25,394	Do.
Bank Canal.					
B. Land	7,550	928	2,725	5,864	Land required for the extension of the canal has been taken up and compensation settled.
F. (1) Other cross drainage works.	9,300	1,800	247	7,394	Inlet at Moolastanam and the under-tunnel at Injeram completed.
H. Escapes	2,795	800	1,033	3,398	Improvements to Kondaya and Razucalva weirs finished.
I. Navigation works	1,24,546	2,410	2,430	1,24,549	Lock establishment quarters at Choppella, Kowlaishwaram, Kulla, and Tallarevu, completed. Those at Maskapilli in progress.
L. Earthwork	1,45,780	107	— 106	1,95,193	Completed.
Cocanada Canal.					
B. Land	2,000	..	..	1,812	Compensation paid for 77·91 acres.
F. (1) Other cross drainage works.	7,720	..	..	6,666	Completed, except Kottaram culvert, which was in progress.
I. Navigation works	1,25,402	1,554	14,882	1,25,120	Nearly completed. Lock establishment quarters at Medapaud, Chintapilli, and Kovur, completed during the year.
L. Earthwork	37,943	..	..	37,887	Completed.
O. Miscellaneous	2,500	..	..	..	
Sámalkót Canal.					
B. Land	1,000	..	..	842	
G. Bridges	22,029	..	..	17,599	Completed, except two bridges.
H. Escapes	4,073	..	..	4,073	Completed.
I. Navigation works	3,493	1,305	1,496	3,894	Lock establishment quarters at Sámalkót, Venkatakristnapuram lock, and Cocanada completed.
L. Earthwork	88,143	..	..	88,143	Completed.
Mundapetta Canal.					
B. Land	..	..	..	..	
I. Navigation works	22,930	1,290	1,189	22,811	Completed.
L. Earthwork	12,700	..	..	12,700	Do.
O. Miscellaneous	1,208	..	..	1,207	Machaveram cattle crossing finished.
Coringa Canal.					
B. Land	250	..	..	246	
F. (1) Other cross drainage works.	1,540	820	761	1,481	Three inlets completed.
I. Navigation works	11,547	2,570	2,472	10,985	Completed, except quarters for lock establishment at Villa and Munjair, which are in progress.
L. Earthwork	34,670	..	..	34,667	Completed.
O. Miscellaneous	1,200	700	668	668	Materials collected for Chellur cattle crossing.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION—*cont.*					
(2) MAIN CANALS AND BRANCHES—*cont.*					
Injeram Canal.					
B. Land	..	..	..	..	
H. Escapes	6,708	..	..	6,708	Completed.
I. Navigation works	1,040	1,040	992	1,017	Lock establishment quarters at Yerrapoteram nearly finished.
L. Earthwork	9,442	..	..	9,442	Completed.
(3) DISTRIBUTARIES.					
Bank Canal.					
B. Land	1,800	..	..	..	
C. Works	11,310	1,710	1,619	2,320	Head-sluice at 33rd mile, 60th chain, sluice into channel on the L.B. below Injeram under-tunnel, and sluice into Kolanka channel, completed.
L. Earthwork	4,000	..	..	..	
Cocanada Canal.					
B. Land	2,100	..	— 47	1,927	
C. Works	27,959	270	284	25,639	Completed, except one head-sluice to Arikarar dam channel.
L. Earthwork	13,853	468	464	13,248	Completed, except one channel in progress.
O. Miscellaneous	400	133	58	326	Cattle-crossings near Puttukonda and Shahapuram on Karapabodi completed.
Sámalkót Canal.					
B. Land	4,080	50	37	2,083	Compensation paid for 36·54 acres.
C. Works	17,982	2,589	2,497	17,905	Completed, except one culvert in progress.
L. Earthwork	17,398	74	74	16,722	Completed.
Mundapetta Canal.					
B. Land	3,290	66	3	2,785	
C. Works	10,784	3,644	2,986	9,956	All head-sluices and dividing dams, except aqueduct to pass Yedida drainage, completed.
L. Earthwork	8,336	113	113	8,322	Nearly completed.
Coringa Canal.					
B. Land	1,800	100	78	1,855	
C. Works	18,674	2,476	2,008	15,512	Seven head-sluices and seven other masonry works completed, and materials for six other works collected.
L. Earthwork	12,081	..	..	6,070	
Injeram Canal.					
B. Land	8,000	300	..	5,079	
C. Works	8,860	2,500	2,893	6,202	Four masonry works completed and materials for eight others collected.
L. Earthwork	9,218	1,000	2,841	7,459	Three channels and culverts at Ventoorpunta completed, and side channels 27 miles 54 chains R. and L. banks nearly finished.
Kovur Munjair Junction Canal.					
C. Works	3,040	3,040	2,082	2,082	Sluices east and west bank at Salapaka completed, and those at Penuguduru and Patarlagedda nearly so.
(4) DRAINAGE AND PROTECTIVE WORKS.					
Mundapetta Canal.					
L. Earthwork	342	..	..	342	Completed.
Coringa Canal.					
L. Earthwork	500	..	..	..	
Tooliabaga Drain.					
B. Land	12,368	..	..	10,310	
C. Works	17,116	2,700	2,931	14,996	Tunnel under Velanghi straight cut, and one aqueduct, completed, four other works in progress.
L. Earthwork	1,18,854	6,500	2,125	1,03,150	Improvements to Isodavaram drain completed.
Biccavole Drain.					
B. Land	4,937	250	508	3,025	
C. Works	8,670	342	240	7,041	One drop completed and materials collected for one inlet sluice.
L. Earthwork	59,200	2,500	2,549	49,610	Catch drain at back of R.B. to inlet below Vetlapalem drain, and extending and improving the Kaikavole drain R.B. from near Puttakonda, finished.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION—*cont.*					
(4) DRAINAGE AND PROTECTIVE WORKS—*cont.*					
Takee Drain.					
B. Land	12,897	291	194	5,323	
C. Works	15,089	1,600	864	8,353	Materials collected for two sluices during the year.
L. Earthwork	2,18,729	7,000	7,872	1,85,237	Undrangi drain improvements completed. Bheemacrosupalem drain nearly completed, as also Matsura drain.
Total, Eastern Section ..	13,80,508	54,440	50,669	12,46,428	
CENTRAL SECTION.					
[This report was received on the 29th April 1885.]					
Main Canal.					
D. Regulators	13,348	..	..	13,348	Completed.
I. Navigation works	1,220	150	174	1,243	
L. Earthwork	39,000	500	559	1,374	In progress.
Gunnaram Canal.					
B. Land	2,310	600	600	853	
F. River and hill torrent works ..	25,440	5,000	4,566	18,060	Improvements to the Gunnaram aqueduct in progress.
H. Escapes	10,920	2,010	1,928	5,297	Bellampudi weir in progress.
I. Navigation works	1,35,490	13,770	13,858	56,765	Ralli lock and lock weir, and Râmachandrapur lock weir, completed; Mandapulanka lock and lock weir in progress.
L. Earthwork	1,15,600	14,000	13,940	47,403	The canal from 20th to 27th mile improved, and final trimming had to be done.
Bank Canal.					
B. Land	900	100	181	281	
F. River and hill torrent works ..	9,700	4,420	4,404	10,530	Virdhigowtami drain under-tunnel in progress.
F. (1) Other cross drainage works .	5,010	690	769	1,492	Vuchili drain inlet sluices nearly completed.
H. Escapes	660	..	..	..	
I Navigation works	94,150	26,100	26,440	38,003	Lolla lock weir completed, and Lolla lock in progress.
L. Earthwork	53,320	4,000	4,996	5,221	Lolla lock weir channel improved.
Amalápur Canal.					
B. Land	120	50	47	47	
H. Escapes	18,950	..	..	..	
I. Navigation works	43,460	14,900	13,100	13,100	
L. Earthwork	87,150	27,240	26,954	43,380	Completed up to the 14th mile.
Bendamurlanka Canal.					
B. Land	690	..	..	..	
I. Navigation works	51,430	..	..	4	
L. Earthwork	9,000	..	..	..	
(3) DISTRIBUTARIES.					
Main Canal.					
C. Works	650	..	..	592	Lolla channel head-sluice completed.
Gunnaram Canal.					
C. Works	16,838	1,410	1,800	2,911	Three sluices in progress.
L. Earthwork	5,700	700	700	700	
Bank Canal.					
C. Works	6,100	..	..	..	
L. Earthwork	1,000	..	..	..	
Amalápur Canal.					
C. Works	8,800	2,700	2,824	2,824	
L. Earthwork	5,000	..	..	..	
Bendamurlanka Canal.					
C. Works	3,950	..	..	..	
L. Earthwork	1,000	..	..	..	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
CENTRAL SECTION—*cont.*					
(4) DRAINAGE AND PROTECTIVE WORKS.					
B. Land	1,900	420	185	880	
C. Works	2,700	..	..	..	
L. Earthwork	1,11,173	3[illegible],680	38,8[illegible]1	74,946	Pullivella drain completed, except 900 feet. Improvements to the Panchanaddi, connected with the Lower Kowsika drain, in progress. Gorinkala drain improved from 10½ to 11⅛ and from 13 to 14¼ miles.
Total, Central Section ..	8,82,679	1,58,440	1,56,916	3,39,254	
WESTERN SECTION.					
[This report was received on the 19th May 1885.]					
(2) MAIN CANALS AND BRANCHES.					
Main Canal.					
D. Regulators	14,861	..	..	14,861	Completed.
B. Land	2,000	..	..	1,308	
I. Navigation works	1,520	390	410	1,452	Lock establishment quarters completed.
L. Earthwork	36,509	..	..	36,509	Completed.
Kakaraparru Canal.					
B. Land	5,000	370	..	2,692	
F. (1) Other cross drainage works .	15,949	..	..	15,954	Two under-tunnels and improvements to Padava, Vilivenna, and Palakódu drains, completed.
L. Earthwork	24,528	..	..	24,528	Completed.
Gostanadi and Velpur Canal.					
B. Land	10,200	1,300	63	4,848	
E. Falls and weirs	5,580	..	..	5,580	Weir at 14th mile completed.
H. Escapes	3,250	..	..	3,151	
I. Navigation works	38,422	650	274	38,039	Completed.
L. Earthwork	56,136	730	734	55,875	Nearly completed.
O. Miscellaneous	235	..	..	..	
Gostanadi and Velpur Canal Extension.					
B. Land	2,900	400	276	2,706	
F. (1) Other cross drainage works .	3,100	1,000	1,895	1,895	Gunupudi inlet, and Bhímaveram under-tunnel, in progress.
G. Bridges	8,000	1,857	2,074	8,217	Visvakodu bridge completed.
I. Navigation works	48,280	6,850	10,371	30,990	Visvakodu lock weir, lock, and lock establishment quarters, completed.
L. Earthwork	17,314	4,400	4,809	16,281	Extension of canal completed.
Bank Canal.					
B. Land	4,420	..	..	3,810	
H. Escapes	6,984	2,500	2.573	7,197	Nakala surplus weir completed.
I. Navigation works	95,007	2,050	1,467	94,002	Completed, except lock establishment quarters, which are nearly completed.
L. Earthwork	27,589	..	..	27,589	Completed.
Narsápur Canal.					
B. Land	2,000	..	..	1,242	
F. (1) Other cross drainage works.	7,236	..	..	7,236	Completed.
H. Escape	2,664	..	..	2,664	Do.
I. Navigation works	1,56,659	1,800	1,788	1,57,058	Do.
L. Earthwork	19,628	..	..	19,628	Do.
Ellore Canal.					
B. Land	2,400	..	..	909	
F. River and hill torrent works ..	14,559	1,000	1,215	12,407	Improving under-tunnels in progress.
H. Escapes	10,784	250	392	2,595	Almost completed.
I. Navigation works	2,420	700	841	2,639	Ellore lock establishment quarters nearly completed, and those at Nandamur completed.
L. Earthwork	48,991	..	..	48,991	Completed.
F. (1) Other cross drainage works.	..	845	792	792	Pulla outlet completed.
Attili Canal.					
B. Land	3,000	..	..	2,090	
H. Escapes	3,461	..	..	3,461	Completed.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM —*cont.*	RS.	RS.	RS.	RS.	
WESTERN SECTION—*cont.*					
(2) MAIN CANALS AND BRANCHES—*cont.*					
Attili Canal—cont.					
I. Navigation works	34,289	500	121	32,286	Completed, except lock establishment quarters, in progress.
L. Earthwork	17,504	..	..	17,504	Completed.
Junction Canal.					
B. Land	450	..	..	248	
H. Escapes	11,697	..	..	11,697	Completed.
I. Navigation works	41,620	550	289	41,360	Completed, except lock establishment quarters, in progress.
L. Earthwork..	21,821	..	..	21,820	Completed.
Venkia and Wyeru Canal.					
H. Escapes	1,565	..	..	1,565	Completed.
I. Navigation works	4,765	1,590	1,278	2,904	Materials collected for lock establishment quarters.
Undi Canal.					
B. Land	1,800	..	..	1,550	
D. Regulators	2,047	..	..	2,047	Completed.
H. Escapes	6,191	..	..	6,118	Do.
I. Navigation works	35,053	1,500	1,051	34,495	Completed, except lock establishment quarters, which were in progress.
L. Earthwork	25,500	..	..	25,011	Nearly completed.
(3) DISTRIBUTARIES.					
Kakaraparru Canal.					
B. Land	540	340	11	11	
C. Works	9,545	..	..	9,714	Two sluices and three under-tunnels completed.
L. Earthwork	3,650	200	2	3,169	Kavalipuram channel and drain completed.
Gostanadi and Velpur Canal.					
B. Land	1,290	910	494	494	
C. Works	17,472	3,500	2,503	13,046	Five sluices completed, and materials collected for four sluices and dams.
L. Earthwork	5,596	..	..	2,848	Two channels completed, and one channel in progress.
Gostanadi and Velpur Canal Extension.					
C. Works	2,570	500	618	1,740	Visakoder channel weir completed, and two sluices in progress.
Bank Canal.					
B. Land	450	800	428	428	
C. Works	6,698	2,000	1,729	6,080	Four out of five head-sluices, one dividing dam, and two under-tunnels, completed; and one sluice and one under-tunnel in progress. Materials being collected for other sluices.
L. Earthwork	9,726	2,145	964	7,045	One channel completed, and two nearly so.
Narsapur Canal.					
B. Land	1,350	..	..	1,156	
C. Works	22,070	..	217	21,656	Completed.
L. Earthwork	11,707	..	..	9,177	Do.
Ellore Canal.					
B. Land	5,700	..	..	4,994	
C. Works	56,959	..	..	56,960	Completed.
L. Earthwork	48,579	..	..	48,528	Do.
O. Miscellaneous	772	..	..	771	Do.
Attili Canal.					
C. Works	10,717	..	..	10,705	Completed.
L. Earthwork	12,646	..	..	12,646	Do.
Venkia and Wyeru Canal.					
B. Land	500	390	93	243	
C. Works	21,060	3,868	4,221	10,344	Eleven sluices completed, four sluices and several dams in progress.
L. Earthwork	8,219	2,500	1,927	6,100	Three channels completed.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
GODAVARI DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
WESTERN SECTION—*cont.*					
(3) DISTRIBUTARIES—*cont.*					
Undi Canal.					
B. Land	1,350	564	168	953	
C. Works	29,868	4,436	4,278	14,466	Materials collected for all minor sluices and dams.
L. Earthwork	34,053	3,155	4,809	22,762	Chilakalur channel and Kolanapilli lanka channel completed.
(4) DRAINAGE AND PROTECTIVE WORKS.					
Ellore Canal.					
B. Land	4,500	..	..	2,536	
C. Works	23,653	..	..	23,653	Completed.
L. Earthwork	66,159	..	..	66,159	Do.
Attili Canal.					
C. Works	689	..	..	689	Completed.
Undi Canal.					
C. Works	6,320	1,000	955	1,363	Nakálakodu under-tunnel completed, and materials collected for four under-tunnels.
L. Earthwork	3,190	500	128	1,239	Koramally drain completed.
Nakkala Drain.					
B. Land	400	400	403	403	
C. Works	27,080	9,020	11,829	27,909	Additional apron to Nakala outfall sluice nearly completed.
L. Earthwork	1,980	1,980	1,976	1,976	Cross bank completed.
Mogultur Drain.					
B. Land	1,300	..	..	1,063	Compensation paid for 57·43 acres.
C. Works	2,363	..	..	2,363	Completed.
L. Earthwork	20,646	..	..	20,646	Do.
Gontur Drain.					
B. Land	2,000	..	..	822	Compensation paid for 54·30 acres.
C. Works	..	..	..	..	
L. Earthwork	22,500	500	..	17,384	Work in good progress.
Yennamaduru Drain.					
C. Works	13,855	2,050	1,533	13,104	Yendagandi inlet completed, and Bavamkodu inlet nearly so, seven inlets were completed previously.
L. Earthwork	13,870	..	..	13,747	Completed.
Minor Drains.					
B. Land	1,050	..	..	725	Compensation paid for 10·24 acres.
C. Works	6,626	..	..	6,626	Completed.
L. Earthwork	44,523	8,500	7,308	38,426	Kaza, Bondada, Royalam, Razukodu, and Rudrayakodu drains, completed; Irlakodu and Buggeswaram drains nearly so.
Compensation for various canals ..	..	..	..	— 108	
Total, Western Section ..	14,91,579	80,400	79,307	13,64,564	
Unforeseen expenses ..	2,950	..	..	..	
Total, Godávari Delta System ..	81,19,037	3,05,400	2,94,254	73,07,406	
KISTNA DELTA SYSTEM.					
Old outlay	30,81,755	..	..	30,81,755	
[The reports for the Kistna Eastern and Gudiváda divisions were received on the 27th and 21st April 1885, respectively.]					
(1) HEAD WORKS.					
B. Land	135	..	..	135	
C. Works	1,30,500	11,000	8,499	10,941	Screw gearing shutters for three vents of the under-sluices completed and for the remaining vents in progress.
K. Buildings	35,253	9,929	14,000	20,544	Renewal of roof of workshop building completed, and shed for machinery and compound-wall nearly so. Foundations of other buildings completed.
Total ..	1,65,888	20,929	22,499	31,620	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION.					
(2) MAIN CANALS AND BRANCHES.					
Main Canal.					
B. Land	4,500	..	..	5,188	Completed.
D. Regulators	14,300	..	..	14,344	Do.
G. Bridges	1,550	..	..	..	
I. Navigation works	7,734	..	..	7,844	Do.
L. Earthwork	1,05,462	..	..	1,04,961	Do.
Ellore Canal.					
F. River and hill torrent works ..	89,965	1,657	4,291	43,954	Outlet on the R.B. 27th mile 40th chain completed; Kasarapalli aqueduct in progress.
I. Navigation works	27,755	..	..	..	
L. Earthwork	29,640	..	..	..	
Ryves' Canal.					
B. Land	9,090	597	578	8,666	
D. Regulators	20,884	..	..	20,541	Head-sluice completed.
E. Falls and weirs	5,816	..	..	5,815	Completed.
F. (1) Other cross drainage works.	5,654	2,058	2,002	5,598	Four inlets completed and two nearly so, and four inlets in progress.
G. Bridges	30,859	3,500	3,699	20,510	One out of three bridges completed, and another in progress.
K. Buildings	2,853	..	..	2,853	Gudiváda rest-house purchased.
L. Earthwork	3,83,000	15,017	12,999	3,71,849	The whole second reach completed, third reach partly excavated.
O. Miscellaneous	1,795	500	252	252	
Masulipatam Canal.					
B. Land	678	602	602	678	
F. (1) Other cross drainage works.	22,204	..	..	22,205	Completed.
G. Bridges	2,820	..	..	..	Not required.
I. Navigation works	38,860	691	444	960	
L. Earthwork	2,49,760	12,000	12,189	86,660	In progress.
Pamarru Canal.					
B. Land	92	19	19	92	
G. Bridges	9,000	..	..	1,325	
Bank Canal.					
B. Land	10,000	4,036	2,904	3,301	
D. Regulators	6,940	..	..	..	
F. River and hill torrent works..	3,58,500	..	..	..	
F. (1) Other cross drainage works.	6,650	..	..	..	
G. Bridges	44,650	..	..	..	
H. Escapes	5,830	..	..	..	
I. Navigation works	11,970	..	..	..	
K. Buildings	8,460	..	..	..	
L. Earthwork	3,40,780	..	..	4,837	Work done for famine relief in 1877-78.
O. Miscellaneous	9,665	87	87	87	
P. Maintenance	32,000	..	..	..	
Pulleru Canal.					
B. Land	5,926	520	393	4,486	
D. Regulators	8,624	1,624	1,206	6,320	Regulating bridge at Pamarru constructed.
E. Falls and weirs	6,486	886	726	6,218	Completed.
G. Bridges	..	..	..	1,325	Do.
L. Earthwork	82,360	4,500	4,559	84,127	Nearly completed.
O. Miscellanoous	9,502	1,000	796	796	Materials for four cattle crossings collected.
Polraz Canal.					
B. Land	5,517	462	292	769	
D. Regulators	1,240	1,240	1,240	1,240	Head-sluice completed.
G. Bridges	5,900	..	..	..	
I. Navigation works	79,019	21,038	20,663	44,804	Head lock and Vinjeram lock weir completed, Vinjeram lock nearly completed, and Tadinada lock and lock weir in progress.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION—*cont.*					
(2) MAIN CANALS AND BRANCHES —*cont.*					
Polraz Canal—cont.					
K. Buildings	4,337	25	10	1,722	Rest-house at Rudraram completed.
L. Earthwork	39,902	4,000	4,231	30,761	Widening completed.
O. Miscellaneous	7,395	1,600	1,355	1,671	Materials for cattle crossings collected.
H. Escapes	1,985	1,985	1,913	1,913	Surplus weir at Vinjeram nearly completed.
E. Falls and weirs	..	..	..	..	
Bantumilli Canal.					
B. Land	339	240	238	310	
D. Regulators	1,060	860	554	554	Improvements to head-sluice nearly completed.
G. Bridges	6,190	..	..	..	
H. Escapes	9,340	..	..	..	
I. Navigation works	68,605	7,875	7,304	8,795	Materials collected for lock and lock weir at 5½ miles. Improvements to head lock completed.
K. Buildings	3,990	..	39	2,679	Rest-house at Cowtaram completed.
L. Earthwork	43,460	..	..	..	
O. Miscellaneous	3,230	..	..	..	
(3) DISTRIBUTARIES.					
Ellore Canal.					
B. Land	7,000	1,320	..	..	
C. Works	14,465	4,350	2,798	3,373	Materials collected for two head-sluices.
L. Earthwork	25,450	24	1,103	1,103	More than half the work on Muparru channel finished.
O. Miscellaneous	..	1,200	658	658	
Ryves' Canal.					
B. Land	12,159	2,113	108	1,278	
C. Works	35,325	..	..	4,161	Two bridges and two sluices completed.
L. Earthwork	67,154	200	172	2,727	Bench mark stones on Dosapad channel fixed.
O. Miscellaneous	3,676	..	..	..	
Masulipatam Canal.					
B. Land	4,195	369	369	1,308	
C. Works	17,936	..	..	10,389	Old expenditure on west side channel.
L. Earthwork	56,919	..	..	38,920	Do. do. do.
O. Miscellaneous	1,500	..	..	..	
Bank Canal.					
B. Land	21,017	..	..	..	
C. Works	48,585	..	..	..	
L. Earthwork	1,16,615	..	..	..	
Pulleru Canal.					
B. Land	24,799	3,618	964	4,360	
C. Works	82,793	10,734	10,638	14,286	Surplus weir, skew arch bridge, and three sluices, completed, as also improvements to a weir. One head-sluice in progress.
L. Earthwork	1,68,473	19,796	19,425	26,190	Gudiváda channel completed, and Bantumilli south side channel partially. Kódúr new head, and Chintalacotta new head, completed, as also one distributary.
O. Miscellaneous	15,063	500	475	475	Three ramps nearly completed.
Polraz Canal.					
B. Land	12,825	300	297	351	
C. Works	44,675	200	176	176	
L. Earthwork	92,001	1,130	851	6,223	Chigurukota and Ramavaram channels completed, and Tadinada channel ¾ finished.
O. Miscellaneous	6,930	..	..	..	
Bantumilli Canal.					
B. Land	1,945	410	..	..	
C. Works	4,184	..	..	..	
L. Earthwork	9,210	..	..	..	
O. Miscellaneous	768	..	..	..	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION—*cont.*					
(4) DRAINAGE AND PROTECTIVE WORKS.					
Pulleru Canal.					
B. Land	11	..	..	..	
Ellore Canal.					
B. Land	4,075	..	..	..	
L. Earthwork	36,615	1,889	1,675	15,646	Widening Budemeru drain completed.
O. Miscellaneous	11,965	..	..	..	
Ryves' Canal.					
B. Land	457	..	..	..	
C. Works	721	..	..	..	
L. Earthwork	1,171	..	..	..	
Drainage along the Left Bank of Masulipatam Canal.					
B. Land	383	383	23	23	
L. Earthwork	1,080	2	2	2	
O. Miscellaneous	58	..	..	54	
Sivaganga Drain.					
B. Land	211	..	..	210	
Kanikala Main Drain.					
B. Land	1,908	..	..	..	
C. Works	2,725	..	..	..	
L. Earthwork	14,687	..	..	..	
Devarapalli Drain.					
L. Earthwork	333	..	..	..	
Taleru (Divi) Drain.					
B. Land	1,333	..	..	..	
C. Works	2,500	..	..	..	
L. Earthwork	16,667	..	..	..	
Gudermotu (Divi) Drain.					
B. Land	667	..	..	..	
C. Works	3,166	..	..	..	
L. Earthwork	4,500	..	..	..	
Mopidevi Drain.					
L. Earthwork	167	..	..	..	
Lingala Drain.					
B. Land	465	..	..	476	
L. Earthwork	3,052	..	..	3,052	Completed.
Uppuluru Drain.					
B. Land	1,028	1,028	268	268	
C. Works	10,717	..	..	..	
L. Earthwork	16,719	4,000	4,070	4,086	3rd mile nearly completed, work in 2nd mile in progress.
O. Miscellaneous	261	..	..	..	
Chendrayakodu Drain.					
B. Land	19,740	5,000	3,630	3,630	
C. Works	27,780	5,250	5,174	9,793	Culvert under Ryves' canal completed to top of arches.
L. Earthwork	92,763	10,000	9,657	15,799	Last 10 miles of the drain dug out to tentative width.
O. Miscellaneous	3,119	..	..	..	
Polrazukodu Drain.					
B. Land	23,830	1,363	283	283	
C. Works	53,868	..	..	..	
L. Earthwork	1,04,716	13,000	13,196	25,705	Main drain completed to end of new cut. Komaravolu affluent completed to its infall into the main drain from Pamarru road.
O. Miscellaneous	4,716	..	..	..	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
EASTERN SECTION—*cont.*					
(4) DRAINAGE AND PROTECTIVE WORKS—*cont.*					
Kolleru Embankment.					
B. Land	904	..	..	..	
L. Earthwork	17,935	..	..	..	
Polraz Canal.					
B. Land	150	..	..	..	
L. Earthwork	3,505	..	..	..	
Pullava Main Drain and Affluents.					
B. Land	850	630	107	107	
C. Works	2,505	..	..	..	
L. Earthwork	17,625	2,392	2,459	4,419	Last 2½ miles at tail dug out. Annava drain completed.
O. Miscellaneous	365	..	..	..	
Damidi Drain.					
B. Land	220	200	..	..	
C. Works	1,865	..	..	..	
L. Earthwork	5,986	5,100	5,083	5,085	Earthwork nearly completed.
O. Miscellaneous	135	..	..	..	
Peddakomileru Drain and Affluents.					
B. Land	2,200	60	41	41	
C. Works	4,227	..	..	..	
L. Earthwork	37,590	4,000	3,728	3,728	Extension of Lingala drain to its infall into Pedakomileru completed tentatively.
O. Miscellaneous	424	..	..	..	
Peddalanka Main Drain and Affluents.					
B. Land	3,410	..	..	120	
C. Works	945	..	..	..	
L. Earthwork	84,090	1,050	2	2	
O. Miscellaneous	778	..	..	..	
Luzzabanda Drain.					
B. Land	18,400	4,583	160	160	
C. Works	40,612	..	..	..	
L. Earthwork	1,54,446	11,067	11,668	13,085	A portion of the 2nd section has been widened to a width of 60 feet.
O. Miscellaneous	5,576	..	..	..	
Sultanagaram Drain.					
B. Land	601	189	189	189	
L. Earthwork	2,415	..	..	..	
Kanakavally Drain.					
B. Land	1,117	..	..	..	
C. Works	16,815	..	..	..	
L. Earthwork	8,760	..	..	..	
O. Miscellaneous	492	..	..	..	
Gúdur Swamp Minor Channels.					
B. Land	375	..	..	..	
C. Works	1,500	..	..	..	
L. Earthwork	5,625	..	..	..	
Total, Eastern Section ..	41,00,402	2,29,998	1,85,034	11,51,628	
WESTERN SECTION.					
[This report was received on the 24th April 1885.]					
(2) MAIN CANALS AND BRANCHES.					
Main Canal.					
B. Land	3,500	500	174	3,757	
D. Regulators	15,720	..	..	15,702	Completed.
I. Navigation works	210	..	..	212	Do.
L. Earthwork	5,34,520	32,800	32,843	1,61,280	Canal widened from ½ to 8th, 11th and 12th miles.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
WESTERN SECTION—*cont.*					
(2) MAIN CANALS AND BRANCHES —*cont.*					
Main Canal—cont.					
F. River and hill torrent works ..	..	476	465	465	Inlet in 4th mile completed.
H. Escapes	..	1,000	531	531	Materials under collection.
O. Miscellaneous	..	224	294	294	Blasting work in progress.
Bank Canal.					
B. Land	50	..	..	50	
D. Regulators	3,390	..	..	..	
F. (1) Other cross drainage works.	7,275	..	..	..	
G. Bridges	19,310	..	..	..	
H. Escapes	5,600	..	..	..	
I. Navigation works	99,952	17,023	15,652	40,248	Kollur and Vellatur locks nearly completed.
K. Buildings	5,000	2,900	1,552	1,552	Rest-houses at Pallapatla and Kallipara in progress.
L. Earthwork	1,15,715	3,170	1,268	1,268	
O. Miscellaneous	9,750	..	..	..	
Nizampatam Canal.					
L. Earthwork	10,645	..	..	..	
Commamur Canal.					
B. Land	16,068	..	..	9,563	
D. Regulators	2,613	..	..	2,593	Completed.
F. River and hill torrent works ..	2,41,678	19,000	21,278	1,13,006	Karenchedu outlet completed, Karenchedu aqueduct and improvements to Nallámadu Parchur vagu surplus sluices and Swerna outlet nearly so, and materials collected for Alleru vagu surplus sluices. Firangidibba inlet, Appapuram outlet and Saki aqueduct in progress.
G. Bridges	45,467	8,800	11,005	23,989	Karenchedu bridge and Inkollu bridge in progress.
I. Navigation works	1,59,020	..	..	1,36,583	Four locks, 2 lock weirs, and a towpath, completed.
K. Buildings	4,010	2,376	2,390	3,845	Karencheduand Nallámada rest-houses completed.
L. Earthwork	3,08,257	2,298	2,153	1,05,933	Works in the 2nd, 4th, and 5th reaches completed, and that in 1st and 3rd in progress. New cut from Guntur Nalla to combined culvert completed.
O. Miscellaneous	7,100	1,062	909	1,847	Cattle crossing at Vadlamudi completed.
(3) DISTRIBUTARIES.					
Bank Canal.					
B. Land	6,670	813	422	422	
C. Works	53,890	1,296	580	580	Head-sluice to Chivalur channel in progress, and materials under collection for Kuchinapudi channel head sluice.
L. Earthwork	80,910	4,320	3,435	3,435	Excavation of Chidalur channel almost completed, and extension of Peteru channel in progress.
Nizampatam Canal.					
C. Works	5,061	..	4	3,572	
L. Earthwork	10,211	..	..	6,732	
Commamur Canal.					
B. Land	14,702	1,000	340	1,091	
C. Works	61,058	697	597	12,444	Works on Budam and Moorkondapad channels completed in previous years. Head-sluices to Jagarlamudi channel and Karenchedu channel completed.
L. Earthwork	1,45,881	1,347	910	44,834	Budam and Moorkondapad channels completed in previous years. Jagarlamudi channel completed for 2 miles up to 1st drop. Santaravur side channel completed, and Jupudi channel nearly so. Oliveru branch channel partially excavated.
O. Miscellaneous	2,000	..	..	..	
(4) DRAINAGE AND PROTECTIVE WORKS.					
Drainage Channel from Emileru to Ferringidibba.					
L. Earthwork	10,428	4,500	4,029	5,325	The drain to a bottom width of 50 feet has been completed.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
KISTNA DELTA SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
WESTERN SECTION—*cont.*					
(4) DRAINAGE AND PROTECTIVE WORKS—*cont.*					
Répalle Main Drain.					
B. Land	23,070	2,250	130	778	
C. Works	39,206	5,000	3,051	3,051	Materials collected for bridge near Gudavalli.
L. Earthwork	1,81,276	30,800	24,764	63,074	Excavation completed as far as in-fall of Kovur affluent. Work below Arapallivada and above Guduvalli in progress.
O. Miscellaneous	240	..	37	37	
Bhateprolu Main Drain.					
C. Works	17,248	..	..	..	
L. Earthwork	28,166	..	..	..	
O. Miscellaneous	2,439	..	..	..	
Peddapali Drain.					
B. Land	123	..	..	96	
L. Earthwork	2,210	1,500	1,092	1,092	
Nizampatam Drain.					
B. Land	3,350	..	..	..	
C. Works	6,740	..	..	..	
L. Earthwork	6,801	..	..	..	
Tungabhadra Drain and Affluent					
B. Land	17,172	500	..	..	
C. Works	99,794	..	..	..	
L. Earthwork	4,92,153	5,500	11	11	The first one mile below bridge in hand.
O. Miscellaneous	6,152	..	37	37	
Romperu Drain and Affluents.					
B. Land	1,500	413	320	320	
C. Works	21,799	..	..	..	
L. Earthwork	1,60,810	5,000	4,994	4,994	Karenchedu drain completed to a width of 24 feet and to the proper depth.
Total, Western Section ..	31,15,901	1,56,570	1,35,267	7,74,613	
Unforeseen expenses ..	2,67,048	..	..	..	
Total, Kistna Delta ..	1,07,30,994	4,07,497	3,42,800	50,39,616	
SANGAM PROJECT.					
[This report was received on the 24th April 1885.]					
(1) HEAD WORKS.					
A. Preliminary expenses ..	51,130	..	..	51,130	Completed.
B. Land	40	..	..	33	
C. Works	5,55,485	1,11,671	1,22,852	4,61,367	Anicut body-wall raised to full height omitting coping for 2,720 feet and to 1½ feet lower for 1,360 feet, about ⅓ coping stones dressed, rear wall completed. 1st bond wall built to full height for 1,740 feet and to 2 feet lower for 2,349 feet. 2nd bond wall built to full height for 1,290 feet and rest in hand; apron nearly one-third done and groynes nearly completed.
K. Buildings	22,295	..	..	19,955	Under-sluices completed.
O. Miscellaneous	34,325	21,377	18,251	30,430	River embankment completed.
P. Maintenance	2,890	1,173	1,237	4,106	
(2) MAIN CANALS AND BRANCHES.					
Kanigiri Canal.					
B. Land	2,06,273	50,000	65,197	94,564	
D. Regulators	93,492	5,392	5,392	93,423	Head-sluice completed.
E. Falls and weirs	25,000	3,862	2,163	23,301	Drop completed.
G. Bridges	26,083	350	350	25,265	Completed.
L. Earthwork	2,14,536	60,000	57,270	2,10,461	Completed except a portion at the end. Restoration of damages to the canal was completed.
M. Plantation	3,000	..	..	..	
N. Tanks and reservoirs ..	2,70,670	41,000	44,649	2,03,678	Nearly completed.
O. Miscellaneous	10,434	3,600	3,913	9,732	
P. Maintenance	11,082	6,625	6,834	11,082	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
SANGAM PROJECT—*cont.*	RS.	RS.	RS.	RS.	
(2) MAIN CANALS AND BRANCHES —*cont.*					
Duvvuru Canal.					
D. Regulators	900	..	..	864	Surplus weir in progress.
L. Earthwork	1,170	..	..	..	
N. Tanks and reservoirs ..	8,520	8,000	6,128	6,991	Duvvuru reservoir improvements nearly ¾ done.
(3) DISTRIBUTARIES.					
Eastern Canal.					
B. Land	5,812	2,000	..	24	
C. Works	1,22,452	32,400	26,642	53,549	Head-sluice completed except front wings and parapets; bridge finished except parapet and revetment, other masonry works nearly completed.
N. Tanks and reservoirs ..	3,350	..	..	..	
L. Earthwork	1,32,400	30,000	27,967	73,230	Nearly completed.
P. Maintenance	2,170	..	1,295	1,295	
Chavakacherla Tank Supply Channel.					
C. Works	2,170	..	..	..	
L. Earthwork	800	..	..	..	
Vavilla Tank Supply Channel.					
C. Works	1,700	..	..	..	
L. Earthwork	200	..	..	..	
Yellayapalem Branch Channel.					
B. Land	105	105	..	..	
C. Works	4,168	3,090	2,265	2,379	Nearly finished.
L. Earthwork	4,750	3,210	2,034	2,889	Earthwork ⅞ done.
Varni Branch Channel.					
C. Works	8,350	..	..	..	
L. Earthwork	2,470	..	..	..	
Varni Tank Supply Channel.					
C. Works	1,500	..	..	..	
L. Earthwork	100	..	..	..	
N. Tanks and reservoirs ..	8,100	..	..	..	
Alleru Channel.					
B. Land	4,450	..	..	..	
C. Works	16,107	2,000	158	158	Excavation for head-sluice completed and materials collected.
L. Earthwork	4,540	..	..	..	
Purini Tank Supply Channel.					
C. Works	150	..	..	..	
L. Earthwork	120	..	..	..	
Indupur Tank Supply Channel.					
C. Works	80	..	..	..	
Zuvaladium Branch Channel.					
B. Land	250	..	..	..	
C. Works	17,260	..	..	..	
L. Earthwork	8,090	..	..	..	
Iskapalle Branch Channel.					
B. Land	80	..	..	..	
C. Works	4,980	..	..	..	
L. Earthwork	2,910	..	..	..	
Chinnarayampalem Branch Channel.					
C. Works	1,650	..	..	..	
L. Earthwork	1,220	..	..	..	

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
SANGAM PROJECT—*cont.*	RS.	RS.	RS.	RS.	
(3) DISTRIBUTARIES—*cont.*					
Ramanah Branch Channel.					
C. Works	6,750	..	..	..	
L. Earthwork	1,970	..	..	..	
Gogalapalle Branch Channel.					
B. Land	50	..	..	..	
C. Works	6,850	..	..	..	
L. Earthwork	4,730	..	..	..	
Ulavapalle Branch Channel.					
B. Land	300	..	..	..	
C. Works	23,870	..	..	..	
L. Earthwork	18,980	..	..	..	
Alleru Branch Channel.					
B. Land	991	500	266	266	
C. Works	9,760	6,500	5,901	6,251	Regulator and 2 drops built up to floor level and earthwork ¾ done.
L. Earthwork	9,500	8,000	7,057	7,143	
P. Maintenance	..	..	216	216	
Channel from Alleru Tank to Ramanah Tank Channel Head-sluice.					
L. Earthwork	1,000	..	..	..	
Central Channel.					
B. Land	3,775	1,500	923	1,128	
C. Works	17,481	14,430	11,345	13,109	One regulating sluice, seventeen irrigation sluices, two culverts, three drops and one regulating dam were nearly completed except pointing and revetment in a few cases.
L. Earthwork	23,125	8,000	10,570	17,030	Completed ; requires finishing in a few places.
*Southern Channel.**					
B. Land	7,218	6,000	4,538	4,910	
C. Works	96,415	30,687	21,127	32,613	Head-sluice and bridge nearly completed and the regulator and other works in hand.
L. Earthwork	1,37,530	29,009	31,878	33,999	In progress.
P. Maintenance	..	..	31	31	
Duvvuru Branch Channel.					
B. Land	1,553	600	45	467	
C. Works	15,477	2,621	1,673	13,950	Nearly completed.
L. Earthwork	13,452	5,194	4,293	11,928	In progress.
(4) DRAINAGE AND PROTECTIVE WORKS.					
Velvapalla Drain.					
L. Earthwork	700	..	..	..	
Alleru Drain.					
L. Earthwork	200	..	..	..	
Embankment between Kadamitula and Zuvaladium.					
B. Land	325	..	..	..	
C. Works	28,850	..	..	..	
L. Earthwork	12,025	..	..	..	
Yellayapalem Drainage Channel.					
L. Earthwork	4,540	..	..	..	
Challayapalem Drainage Channel.					
B. Land	874	504	682	682	
L. Earthwork	4,510	..	..	..	
Drainage to Moldany.					
B. Land	158	91	..	..	
L. Earthwork	895	509	738	738	Nearly ¾ done.
Duvvuru Drainage Channel.					
L. Earthwork	200	..	..	..	
Drainage Channel at 7 miles of Southern Channel.					
B. Land	213	..	..	..	
L. Earthwork	730	..	..	..	

* Inclusive of the main feeder.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
SANGAM PROJECT—*cont.*	RS.	RS.	RS.	RS.	
(4) DRAINAGE AND PROTECTIVE WORKS—*cont.*					
Drainage from Culvert in 12th mile of Southern Channel.					
L. Earthwork	500	..	..	..	
Unforeseen works ..	38,836	..	..	..	
Total, Sangam Project ..	23,94,142	5,00,000	4,95,880	15,24,377	
Kurnool Canal	1,77,53,819	10,000	— 76,268	1,75,55,444	
BARUR TANK PROJECT.					
[This report was received on the 17th April 1885.]					
(1) HEAD WORKS.					
A. Preliminary expenses ..	1,382	..	14	668	
B. Land	7,841	935	949	8,517	
C. Works	20,380	4,795	2,556	9,123	Benching rock in progress.
K. Buildings	1,581	661	240	1,160	
O. Miscellaneous	4,370	..	..	4,418	
P. Maintenance	362	..	..	355	
(2) MAIN CANALS AND BRANCHES.					
Agram Channel.					
D. Regulators	9,600	1,500	151	1,917	Foundation nearly excavated.
L. Earthwork	1,055	..	..	..	
Nedungal Channel.					
D. Regulators	860	800	388	406	In progress.
Barur Tank Supply Channel.					
D. Regulators	5,210	1,000	251	424	Rock cutting for foundation nearly done.
F. (1) Other cross drainage works.	4,328	2,000	104	104	A little stone collected for outlets.
G. Bridges	3,540	..	30	30	Do. do. for bridges.
L. Earthwork	48,004	21,040	21,521	51,880	Nearly completed.
N. Tanks and reservoirs ..	1,904	1,384	739	739	In progress.
O. Miscellaneous	7,250	..	10	10	A little stone collected for syphon sluice.
(2 A.) RESERVOIRS.					
Barur Tank.					
C. Works	3,096	700	486	2,845	Completed.
L. Earthwork	53,115	13,000	11,105	43,159	About ¾ done.
(3) DISTRIBUTARIES.					
C. Works	38,347	2,450	210	2,360	Keelcooppam east sluice foundation dug, and west sluice nearly completed.
L. Earthwork	42,970	5,000	1,224	1,224	In progress.
N. Tanks and reservoirs ..	414	..	..	..	
Total ..	2,55,609	55,265	39,978	1,29,339	
CAUVERY DELTA SYSTEM.					
Old outlay	7,78,216	..	..	7,78,216	
[This report was received on the 5th June 1885.]					
(1) HEAD WORKS.					
C. Works	69,885	5,418	5,261	6,296	Road from Kutchantimalai completed, and materials collected for Grand anicut alterations.
K. Buildings	7,270	1,262	1,291	7,094	Executive Engineer's bungalow completed.
(2) MAIN CANALS AND BRANCHES. *Cauvery.*					
D. Regulators	1,99,790	63,000	63,006	1,26,107	Concrete foundations and cutstone flooring completed. Abutment and three northern main piers raised to springing level. Other work in progress.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
CAUVERY DELTA SYSTEM.—*cont.*	RS.	RS.	RS.	RS.	
(2) MAIN CANALS AND BRANCHES—*cont.*					
Vennár New Head.					
B. Land	39,268	25,888	25,893	38,336	
D. Regulators	1,39,200	33,000	32,999	60,496	Concrete foundations, apron in front and rear, and cutstone floorings, completed. All piers up to cill level and the northernmost sluice pier and arch completed. North abutment raised to 16 feet above cill.
F. (1) Other cross drainage works.	13.160	10,000	1,508	1,508	Foundations for syphon ¾ excavated.
L. Earthwork	50,500	16,700	4,932	6,308	One-eighth of excavation for Vennár new head completed.
(3) DISTRIBUTARIES.					
Vennár New Head.					
Pillay Voikal.					
C. Works	4,000	2,400	964	964	Two sluices on the left bank of Vennár new cut completed up to the springing level of the arch.
L. Earthwork	..	300	..	..	
Total ..	5,23,073	1,57,968	1,35,854	2,47,109	
Total, Cauvery Delta System ..	13,01,289	1,57,968	1,35,854	10,25,525	
SRIVAIKUNTHAM ANICUT SYSTEM.					
[This report was received on the 28th April 1885.]					
(1) HEAD WORKS.					
B. Land	960	..	..	960	
C. Works	1,98,441	..	..	1,98,439	Completed.
K. Buildings	8,722	..	..	8,722	Do.
O. Miscellaneous	32,027	..	..	24,999	
(2) MAIN CANALS AND BRANCHES.					
South Main Canal.					
B. Land	11,349	..	..	9,796	
D. Regulators	21,380	..	..	21,481	Completed.
F. (1) Other cross drainage works.	2,704	..	..	2,703	Do.
G. Bridges	13,218	..	..	13,217	Do.
L. Earthwork	77,461	..	..	77,464	Do.
North Main Canal.					
B. Land	39,507	..	..	34,324	
D. Regulators	20,219	..	..	20,219	Do.
E. Falls and weirs	1,140	..	..	1,140	Do.
F. (1) Other cross drainage works.	34,987	373	373	33,135	Outlet at 8 miles 60 chains completed.
G. Bridges	15,986	..	..	15,984	Completed.
H. Escapes	7,019	..	..	6,938	Do.
L. Earthwork	1,02,461	..	..	1,02,461	Do.
N. Tanks and reservoirs ..	1,86,511	2,534	2,549	1,78,716	Korampalem tank improvements completed as originally sanctioned. Further improvements were uuder contemplation.
(3) DISTRIBUTARIES.					
Athur Channel.					
B. Land	2,918	979	978	2,917	
C. Works	16,661	214	214	16,363	Completed.
L. Earthwork	22,816	2,000	1,772	21,873	Do.
N. Tanks and reservoirs ..	10,531	500	461	10,204	Do.
Seidukuvoitam Channel.					
C. Works	435	..	..	445	Do.
L. Earthwork	1,020	47	..	698	Nearly completed.
N. Tanks and reservoirs ..	1,798	161	145	1,729	Completed.
Kadamba Channel.					
C. Works	3,142	..	..	3,142	Do.
Puriur Channel.					
B. Land	2,255	..	..	2,255	
C. Works	8,982	..	..	8,981	Do.
L. Earthwork	7,825	..	..	7,825	Do.
N. Tanks and reservoirs ..	1,962	..	..	1,961	Do.

Statement showing the Progress of Capital Expenditure on Irrigation Works, &c.—*cont.*

Name of Project and Description of Work.	Amount of sanctioned Estimate.	Grant for 1884-85.	Expenditure during the Year 1884-85.	Total Expenditure up to end of 1884-85.	Succinct Account, showing the state to which the works have been advanced up to date, &c.
SRIVAIKUNTAM ANICUT SYSTEM—*cont.*	RS.	RS.	RS.	RS.	
(3) DISTRIBUTARIES—*cont.*					
Nullur Branch Channel.					
B. Land	1,193	..	..	1,193	Completed.
C. Works	3,700	..	..	3,681	
L. Earthwork	1,630	..	..	1,605	
Kanam Channel.					
B. Land	6,502	..	..	6,502	Do.
C. Works	1,985	..	..	1,984	Do.
L. Earthwork	35,199	..	..	35,199	Do.
N. Tanks and reservoirs ..	3,326	..	..	3,325	Do.
Tulukan Channel.					
C. Works	1,494	..	..	1,494	Do.
L. Earthwork	2,560	..	..	2,560	Do.
N. Tanks and reservoirs ..	6,685	..	..	3,510	Partly completed.
Avudyar Channel.					
N. Tanks and reservoirs ..	8,749	..	..	8,749	Do.
Channel between Kanam and Ellapanaiken Tanks.					
N. Tanks and reservoirs ..	10,157	..	..	10,156	Do.
Minor Channels.					
C. Works	9,000	..	..	7,509	In progress.
L. Earthwork	7,500	..	..	7,189	Completed.
North Main Channel.					
Kilpidagai Channel.					
C. Works	2,201	..	..	1,921	Do.
Korkai Channel.					
B. Land	..	455	455	455	
C. Works	1,599	..	..	1,319	Do.
Tuticorin Channel.					
B. Land	575	..	..	518	
L. Earthwork	14,112	..	..	14,112	Do.
Minor Channels.					
C. Works	9,600	..	..	10,432	
L. Earthwork	25,500	..	..	21,317	
N. Tanks and reservoirs ..	3,690	3,690	3,465	3,465	
(4) DRAINAGE AND PROTECTIVE WORKS.					
North Main Channel.					
B. Land	2,142	315	315	2,439	Do.
L. Earthwork	30,317	..	..	30,316	
C. Works	2,501	..	..	2,501	
Total ..	10,46,354	11,268	10,727	10,12,542	
Unforeseen expenses	12,697	..	..	..	
Total, Srivaikuntham Anicut System ..	10,59,051	11,268	10,727	10,12,542	

GENERAL ABSTRACT.

System.	Amount of Estimate.	Grant for 1884-85.	Expenditure in 1884-85.	Total Expenditure.
	RS.	RS.	RS.	RS.
Godávari Delta System.				
Works	81,19,037	3,01,840	2,94,254	73,07,406
Establishment	20,11,645	67,100	66,009	18,03,943
Tools and plant	9,58,013	49,744	15,011	9,01,367
Suspense account	...	...	...	31,025
Total ...	1,10,88,695	4,18,684	3,75,274	1,00,43,741
Less Receipts on Capital Account ...	...	...	5	668
Net ...	1,10,88,695	4,18,684	3,75,269	1,00,43,073
Kistna Delta System.				
Works	1,07,30,994	3,86,568	3,42,800	50,39,616
Establishment	25,07,268	81,200	75,678	12,51,366
Tools and plant	6,66,256	47,875	43,461	3,91,018
Suspense account	...	...	683	55,998
Total ...	1,39,04,518	5,15,643	4,62,622	67,37,998
Less Receipts on Capital Account ...	4,734	...	102	6,330
Net ...	1,38,99,784	5,15,643	4,62,520	67,31,668
Sangam Project.				
Works	23,94,142	5,00,000	4,95,880	15,24,377
Establishment	4,89,560	1,00,901	97,554	3,17,359
Tools and plant	1,42,354	22,000	21,998	1,21,002
Total ...	30,26,056	6,22,901	6,15,432	19,65,738
Less Receipts on Capital Account ...	1,29,619	...	...	...
Net ...	28,96,437	6,22,901	6,15,432	19,65,738
Pennér Anicut System.				
Works	10,77,387	...	...	11,14,339
Establishment	1,59,073	...	...	2,78,585
Tools and plant	22,746	...	...	27,858
Suspense account	...	...	...	8,081
Total ...	12,59,206	...	...	14,28,863
Less Receipts on Capital Account ...	...	...	6	7
Net ...	12,59,206	...	6	14,28,856
Kurnool Canal	*1,75,55,444	— 62,000	— 76,268	1,75,55,444
Barur Tank Project.				
Works	2,55,609	55,265	39,978	1,29,339
Establishment	58,170	12,496	8,977	30,413
Tools and plant	6,221	630	450	2,508
Total ...	3,20,000	68,391	49,405	1,62,260
Cauvery Delta System.				
Works	13,01,289	1,57,968	1,35,854	10,25,325
Establishment	3,05,829	31,042	25,290	2,42,570
Tools and plant	52,189	1,500	1,008	47,603
Suspense account	...	...	...	24,957
Total ...	16,59,313	1,90,510	1,62,152	13,40,455
Less Receipts on Capital Account ...	8	...	123	200
Net ...	16,59,305	1,90,510	1,62,029	13,40,255

* Outlay represents the estimate.

General Abstract—*cont.*

System.	Amount of Estimate.	Grant for 1884-85.	Expenditure in 1884-85.	Total Expenditure.
Srivaikuntham Anicut System.	RS.	RS.	RS.	RS.
Works	10,59,051	11,268	10,727	10,12,542
Establishment	2,90,792	2,113	2,065	2,81,429
Tools and plant	11,677	...	...	10,530
Suspense account	...	...	...	...
Total ...	13,61,520	13,381	12,792	13,04,501
Less Receipts on Capital Account ...	...	...	...	240
Net ...	13,61,520	13,381	12,792	13,04,261
Grand Total ...	5,02,38,766	17,67,510	16,01,173	4,05,31,555

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

REPORT by the Superintending Engineer, VI Circle, on the estimate for providing screw shutters to the Biringimulai dam, in Tiruturaipúndi taluk, Tanjore district, Rs. 3,050.

The dam is in Harichendranadi. It is 59 feet 10 inches long, with dam stones 3·17 feet above the crest. The crest is at 3·62 feet above mean sea level and the wing-walls at 7·98 feet. In the late floods water rose to 8·13 feet, over-topped the wing-walls, and breached the junction bank; but fortunately did no damage to the masonry work. It is now proposed to lower the crest to 0·04 feet above mean sea level and provide five screw gearing shutters 9′ 7″ × 6′ and raise the wing-walls $4\frac{1}{4}$ feet above the present level. By this arrangement the flood waters will be lowered and the danger of breaches in ordinary years averted.

2. The piers to be 3 feet thick, with front and rear cut-waters, and 12 feet high. Arches will be turned with a rise of 2 feet and the platform made $4\frac{1}{2}$ feet broad and 16·04 feet above mean sea level.

3. As the old work is sound and good, it is thought better to build the piers on the face-wall and the old flooring than to attempt to found a new foundation, which would necessitate taking up the present floor.

4. The rates are fair and the estimate is recommended for sanction.

RAMNAD, 26th June 1885.

(Signed) H. R. MEAD, Lieut.-Colonel, R.E.,
Superintending Engineer, VI Circle.

No. 126 I.

Submitted to Government with a recommendation that the estimate, which exceeds the limit of sanction under "Extensions and Improvements" may be sanctioned under that head as a special case as the work cannot be postponed until completion estimates for the delta can be prepared, and as it is not considered desirable to apply to the Government of India for sanction of small estimates on Capital Account.

OOTACAMUND, 13th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 18th July 1885, No. 621 I., Public Works.

The estimate, amounting to Rs. 3,050, for providing screw shutters to the Biringimulai dam, in Tiruturaipúndi taluk of the Tanjore district, is sanctioned as follows :—

G. Productive Public Works.
Revenue Account.
38. Irrigation and Navigation.
(Working Expenses.)
Extensions and Improvements.
Cauvery Delta System.
Vennár Section.
(2) Main Canals and Branches.
Harichendranadi.
D. Regulators.

Providing screw shutters to the Biringimulai dam, Estimate ... Rs. 3,050

2. This sanction has been registered as No. 86 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle, with one enclosure.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with duplicate abstract estimate.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 18th.

Recd. *Encl.*

G.O., 18th July 1885, No. 621 I.

JULY.

Biringimulai Dam, Tanjore District

Estimate for screw shutters to the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from Lieutenant-Colonel D. H. TRAIL, R.E., Officiating Deputy Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 1st May 1885, No. 43 A.I. :—

In compliance with the request contained in your letter, No. 318 I., dated 26th March 1885, I am directed to forward, herewith, a copy of the Duke of Argyll's financial despatch, No. 524, dated 11th December 1872, and to state that the procedure indicated in the Secretary of State's despatch of 12th February 1885 is that generally followed in the case of indents for Imperial undertakings chargeable to more than one fixed head, and is simply an expansion of the orders in the despatch of 1872, which referred more particularly to State Railways. The principles which were established in the despatch of 1872 do not appear to have been affected by the rules now in force.

ENCLOSURE.

Despatch from the Secretary of State for India, to the Government of India, dated 11th December 1872, No. 524, Financial.

I have considered in Council your financial letter, dated the 15th March 1872, No 91, forwarding a resolution of your Government, in the Public Works Department, of the 21st December 1871, regarding the mode of charging the sums expended in England on stores for State Railways.

2. In the 2nd paragraph of that resolution it is stated that, as the permanent-way materials, plant, rolling stock, &c., for State lines will, to a great extent, be of an uniform pattern throughout, in indenting for supplies it will be almost impossible to specify the railway on which they will really be used, and that when any portion of a State Railway is open for traffic and expenditure for supplies on account of construction and maintenance is incurred simultaneously, much difficulty will arise in making adjustments between construction and maintenance unless all outlay incurred in England for stores be treated as a remittance to India.

3. It is a recognised principle, and has been acted on for some years, that expenditure incurred in each year should, as far as possible, be charged against the income of that year, and unless a departure from that principle in the case of State Railways shall be considered by you to be absolutely necessary, I cannot sanction it.

4. With regard to the cost of stores chargeable to—

Local Funds,
Provincial Services,
Foreign Stores,
Port Trust Funds, and
Government Workshops,

I have consented to the expenditure being treated as a remittance to India because the sum so expended will either be recovered in India or will be debited to each Local Government against a special grant to that Government, but that is not the case in respect to stores for State Railways.

5. Four plans, as quoted in the margin, are suggested in your resolution, of which you prefer the third, viz., that which provides that the disbursements on account of State Railways should, as far as possible, be charged in this country to the several lines; but I doubt the expediency of adopting that course, for if stores for State Railways be charged in this country to separate lines as far as possible, and cannot be so charged wholly, the accounts would not show the total cost of supplies in the year for each line, but only that portion which happened to have been included in special indents, and the record in the books of this office and in the Home accounts would consequently be incomplete and calculated to mislead.

1. That the stores should be charged to a suspense account. This, in accordance with the views of this department, would be the most economical method of treating the matter, but will possibly not meet the views of the Financial Department or the India Office.
2. That the India Office should charge off finally the stores to the State Railways generally without distinction and without separating capital from revenue items, the necessary separation being subsequently made in the Public Works Department accounts, statements of the adjusting entries in the gross being furnished to the Financial Department of the Government of India and the India Office, so that the actual outlay on each line may appear ultimately in the Home accounts. This would amount to having a final charge in the India Office and Financial Department but treating such charge as a suspense account to the Public Works Department.
3. That failing the assent of the Home Government to the second method, the India Office should charge off the payments made on account of State Railways individually as far as possible, as apparently now intended, but that these charges shall be all lumped together and dealt with in the gross in the Public Works Department as if it were a suspense account. The resulting charges finally arrived at in the Public Works Department would be communicated to the Financial Department and the India Office, with necessary adjusting entries in the gross only, thus avoiding the complication of transfers and debits and credits in detail from one line to another.
4. That a sufficient account establishment should be employed in the Public Works Department at the ports where stores are landed to keep the accounts in such detail as to admit of the debits and credits between each line being distinctly recorded and to prepare detailed accounts of the adjustments that must necessarily be made to pass the outlay from the lines against which it was originally debited to the individual lines to which the stores are finally issued and used up.

6. I consider that the difficulties referred to in paragraph 2 of your resolution might be avoided by applying the second method suggested by you in regard to the entries in the books of account in the two countries and adopting the following course with regard to the entries in the Home and Finance and Revenue accounts presented to parliament, viz., for the period that shall elapse before the construction of State Railways shall have nearly ceased all payments in England for supplies might be treated in the Home accounts as an extraordinary charge under the head of State Railways generally without separating those for maintenance from those for construction and be so stated in the English portion of the Finance and Revenue accounts.

7. In the Indian portion of those accounts the value of English stores used during the year in construction might be included as extraordinary expenditure under each railway, the aggregate of such sums being deducted from the total extraordinary expenditure in India on State Railways and the value of English stores used during the year for maintenance and working be brought to charge as public works ordinary under each railway, the aggregate of those sums being also deducted from the total of the Indian portion of the extraordinary expenditure on State Railways as shown in the margin.

Finance and Revenue Accounts, State Railways, Construction.

—	Expended in India during the year.	Value of stores from England used during the year and other charges in England applicable thereto.	Total.
Indian Portion.	RS.	RS.	RS.
Rajpootana Railway	1,00,000	89,000	1,89,000
Punjab Northern Railway	1,50,000	95,000	2,45,000
Indus Valley Railway	60,000	30,000	90,000
	3,10,000	2,14,000	5,24,000
Deduct—			
Value of stores, &c., from England used during the year as above		2,14,000	
Value of stores, &c., from England used during the year on maintenance, &c., of State Railways included under "public works ordinary," the same having been charged as public works extraordinary in the Home accounts		10,000	
			2,24,000
Total charge in India for construction of State Railways after adjusting the value of stores charged to "public works ordinary"		..	3,00,000
English Portion.			
In England—			
Stores as per Home accounts		2,30,000	
Other charges do.		12,000	
			2,42,000
Total charge in England and India on construction ..		..	5,42,000

8. Thus all stores purchased in England would at first appear as an extraordinary charge or, in other words, as a charge of construction which would be reduced in the combined accounts to the extent of the value of stores applied to maintenance and working during the year.

9. By adopting this course the same amounts would be charged against ordinary revenue in the year as would be charged under the system of treating stores as a remittance to India, the

value of the stores actually used on the construction of each railway during the year would also clearly appear in the accounts, and the total charge in India and England together would nevertheless be the actual expenditure incurred in the year.

10. When the expenditure for maintenance shall exceed that for construction, the system might be reversed, all stores purchased in England being treated as ordinary expenditure, the Indian ordinary expenditure being reduced and the Indian extraordinary expenditure increased to the extent of the value of the English stores used in construction.

11. I take this opportunity of informing you that the statements of expenditure on the several State Railways which have been furnished by your Government in the Public Works Department do not, as regards expenditure in England, altogether agree with the statements forwarded to you from this country.

12. In order to adjust in the Home books the record of that expenditure, I request that you will furnish me with a statement showing on one side the amount in English and Indian currency that has been written on to the books of account in your Public Works Department, from each of the statements received by you of outlay in England, specifying the period to which each statement related, and on the other side the amounts in Indian currency that have been charged to the respective railways. These amounts should correspond with the several sums included as "expenditure in England" in the statements furnished by you, and the balance of the statement should correspond with that of the account in your Public Works Department of State Railway stores purchased in England remaining unappropriated.

Office note to the Examiner of Public Works Accounts, dated	8th May	1885,	No.	145.
" from " " "	13th	"	"	116.
" to " " "	28th	"	"	167.
" from " " "	4th June	"	"	169.
Letter from the " " "	3rd July	"	"	10 I.

ORDER—dated 18th July 1885, No. 623 I., Public Works.

It is observed that, in accordance with the principle approved in paragraphs 6 and 10 of the Duke of Argyll's despatch to the Government of India, in the Financial Department, No. 524, dated 11th December 1872, expenditure incurred in England for stores required for irrigation works, should be charged, in the Home accounts, to Productive Public Works, Capital Account, or to ordinary irrigation works, under whichever head the total expenditure in the presidency may be greater, the necessary adjustments being made in the Indian accounts; but the Secretary of State directed in despatch, No. 2 P.W., dated 12th February 1885, printed in proceedings, Madras Government, No. 318 I., dated 26th March 1885, that the cost of all articles included in the annual indent of stores required for irrigation works during 1885-86 should be charged to the former head irrespective of the fact that the bulk of expenditure in this presidency is under the latter head. These instructions of the Secretary of State will necessitate a separate head of account being opened under Productive Public Works for recording English expenditure which does not appertain to any of the systems classed under that head. The Government of India will, therefore, be requested to address the Secretary of State for a reconsideration of the orders contained in paragraph 2 of despatch No. 2 P.W., dated 12th February 1885.

2. Ordered that the following letter be sent:—

(Here enter No. 624 I., dated 18th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras,

PUBLIC WORKS.

Dated July, 18*th.*

Recd. *Encl.*

G.O., 18th July 1885, No. 623 I.

JULY.

English Stores

Orders on correspondence on the subject of the adjustment of expenditure on —.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

LETTER—from

COLONEL J. O. HASTED, R.E.,

Joint Secretary to the Government of Madras,

Public Works Department,

Irrigation Branch,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

PUBLIC WORKS DEPARTMENT,

(IRRIGATION).

SIR,

In acknowledging the receipt of your letter, No. 43 A.I., dated 1st May 1885, I am directed to forward, herewith, a copy of proceedings, Madras Government, No. 623 I., dated 18th July 1885, and to request that the Government of India will be so good as to address the Secretary of State for a reconsideration of the decision contained in paragraph 2 of despatch, No. 2 P.W., dated 12th February 1885, to this Government, printed in proceedings, Madras Government, No. 318 I., dated 26th March 1885, with a view to the value of English stores required for irrigation works during the current and future years being charged in the Home accounts to "Imperial, Ordinary," instead of to "Productive Public Works, Capital Account," as the bulk of the expenditure on irrigation works is under the former head. The necessary adjustments between the two heads will in due course be made in the Indian accounts.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

OOTACAMUND,
18th July 1885.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 18*th*.

Recd. *Encl.*

18th July 1885, No. 624 I.

JULY.

English Stores

Requesting that the Secretary of State may be asked to reconsider the decision in regard to the adjustment of expenditure on —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from D. C. GORDON, Esq., Examiner, Public Works Accounts, to the Secretary to Government, Public Works Department, dated Madras, 7th July 1885, No. 30 W. :—

I have the honor to submit, herewith, for the information and orders of Government, report from the Executive Engineer, Dowlaishweram Workshops, on the operations of the factory for the year 1884-85, with my notes thereon.

ENCLOSURE.

Notes on the Dowlaishweram Workshop Accounts for 1884-85.

The liabilities of the workshops at the close of the official year 1884-85 amounted to Rs. 1,77,746-6-0, which amount was either paid into treasury or adjusted by transfer in full as particularised in the margin.

Liabilities.	RS.	A.	P.
Cash drawn	1,58,450	0	0
Stores received	18,308	1	5
Decrease in capital	828	3	0
Net profit	160	1	7
Total ..	1,77,746	6	0
Assets.			
Payments into treasury	11,075	0	0
Transfers	1,66,671	6	0
Total ..	1,77,746	6	0

2. It will be observed from the Executive Engineer's report that the profit during the year amounted to Rs. 18,775-0-6, of which amount a sum of Rs. 18,000 was taken towards the reduction of value of block, which was considered to have been over-valued (*vide* inspection report printed in G.O., No. 408 W., dated 20th February 1885), and a further sum of Rs. 614-14-11 was credited to machinery and plant on account of depreciation at 4 instead of 2 per cent.; the balance Rs. 160-1-7 only was accounted for as profit during the year.

3. It would have been well if the Executive Engineer had deferred the above adjustment until formal sanction of Government was obtained; but the adjustment may stand pending the result of the revaluation of the buildings and plant, ordered in G.O., No. 523 I., of 13th June 1885.

4. The factory having been relieved of the charges on account of interest on capital and leave and pension allowances (*vide* G.O., No. 4 I., of 5th January 1883), the result has been a profit of Rs. 160-1-7, which is arrived at as follows :—

	RS.	A.	P.
General charges	17,337	6	11
Depreciation	2,263	9	9
Reduction of value of block	18,000	0	0
Loss on works	8,643	9	8
Total Charges ...	46,144	10	4
Deduct charges from receipts, viz.—			
Percentage recovered on account of general charges ...	26,708	4	6
Profit on works	19,596	7	5
Total ...	46,304	11	11
Net Profit ...	160	1	7

On the other hand, if interest on capital and leave and pension allowances are charged to the workshops, the result would be a loss of Rs. 7,223-10-3 as shown thus :—

	RS.	A.	P.
Other charges as particularised above	46,144	10	4
Interest on capital at 4 per cent.	6,110	11	6
Leave and pension allowances at 14 per cent.	1,273	0	4
Total ...	53,528	6	2
Deduct receipts as shown above	46,304	11	11
Net Loss ...	7,223	10	3

5. If the Executive Engineer had not carried out the adjustment noticed in paragraph 2, and if the interest on capital and leave and pension allowances had been charged, there would have been a profit of Rs. 11,391-4-8.

6. The net profit of Rs. 160-1-7, as exhibited in paragraph 4, has been credited to Revenue Account (*vide* paragraph 3 of G.O., No. 194 I., of 2nd March 1883), and the decrease in capital viz., Rs. 828-3-0, has been credited to tools and plant of the Godávari delta system.

Madras,
7th July 1885.

(Signed) D. C. GORDON,
Examiner, Public Works Accounts.

Order—dated 20th July 1885, No. 625 I., Public Works.

The liabilities of the Dowlaishweram workshops at the end of 1884-85 amounted to Rs. 1,77,586, and the assets to Rs. 1,77,746, showing a net profit of Rs. 160, or 0·09 per cent. on Rs. 1,85,697, the outturn of work, against 12·06 per cent. in the previous year, the large falling off in the profit being due to Rs. 18,000 having been charged off to profit and loss on account of the supposed depreciation in the value as shown in the books of the buildings and machinery. The market value of these has not as yet been ascertained, as directed in G.O., No. 523 I., dated 13th June 1885; when the revaluation has been made, final orders will be issued on the subject. Were it not for this adjustment, the profit would have been 9·72 per cent. on the outturn of work. The result of the operations of the year is on the whole satisfactory.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 625 I.

JULY.

Dowlaishweram Workshops

Orders on accounts of — for 1884-85.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Nellore, 1st July 1885, No. 181 B.C. :—

I have the honor to forward, herewith, for your approval and sanction of Government from the balance of the lump sum provision for tools and plant, an estimate, amounting to Rs. 120, for purchasing crab winch and blocks for hanging gates in the southern sub-division of the Buckingham Canal division. The amount of the estimate can be met from the current year's grant under Tools and Plant, Capital Account.

ORDER—dated 20th July 1885, No. 626 I., Public Works.

The following estimate, amounting to Rs. 120, for purchasing a crab winch and blocks for hanging gates in the southern sub-division of the Buckingham canal, is sanctioned from the balance of the lump sum provision in the completion estimates for the Buckingham canal for tools and plant, which will then be reduced to Rs. 35,369 :—

H. Public Works not classed as Productive.
Provincial.
44. Irrigation and Navigation.
Works for which Capital and Revenue Accounts are kept.
Capital.
Buckingham Canal.
III. Tools and Plant.
New Supplies.

Purchasing a crab winch and blocks for hanging gates, Estimate ... Rs. 120

2. This sanction has been registered as No. 87 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with one enclosure.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with duplicate abstract estimate.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 626 I.

JULY.

Hanging Gates

Estimate for purchasing a crab winch and blocks for — in the southern sub-division of the Buckingham canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 11th July 1885, No. 1524:—

I have the honor to request that sanction may be given to the following alteration of allotments for the Pálár project in the North Arcot division:—

From	RS.	*To*	RS.
Govindavadi Channel.		Govindavadi Channel.	
L. Earthwork	1,500	O. Miscellaneous.	
Kambakal channel.		Prickly-pear (sanctioned in G.O., No. 486 I., dated 27th May 1885) ...	2,755
L. Earthwork	1,356	Káveripák Channel.	
		B. Land (sanctioned in G.O., No. 437 I., dated 8th May 1885)	101
Total ...	2,856	Total ...	2,856

2. The change in the appropriations is required to allow of payment being made in full for clearance of prickly-pear and for compensation for land on sanctioned estimates.

ORDER—dated 20th July 1885, No. 627 I., Public Works.

The following transfers of funds are sanctioned:—

H. Public Works not classed as Productive.
44. Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.
Capital Account.
Pálár Aniout System.
(2) Main Canals and Branches.

From	RS.	*To*	RS.
Govindavadi Channel.		Govindavadi Channel.	
L. Earthwork	1,500	O. Miscellaneous: Prickly-pear ...	2,755
Kambakal channel.		Káveripák Channel.	
L. Earthwork	1,356	B. Land...	101
Total ...	2,856	Total ...	2,856

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 627 I.

JULY.

Funds

Certain transfers of —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 11th July 1885, No. 1531 :—

With reference to your memorandum, No. V/30 P.S., dated 29th June 1885, I have the honor to report that the Rs. 1,000 allotted for repairs to Irrigation and Navigation Works for which Capital and Revenue Accounts are not kept in the Presidency division, are available for re-appropriation elsewhere.

2. The money is much wanted for repairs in South Arcot under the same head.

ORDER—dated 20th July 1885, No. 628 I., Public Works.

The following transfer of funds is sanctioned :—

H. Public Works not classed as Productive.
44. Irrigation and Navigation Works for which neither Capital nor Revenue accounts are kept.
Repairs.

From		*To*	
Presidency division	Rs. 1,000	South Arcot division	Rs. 1,000

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 628 I.

JULY.

Funds

Certain transfer of —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following office note from the Examiner of Public Works Accounts, dated 9th July 1885, No. 264.

Proceedings of Madras Government, Nos. 551 I. and 556 I., dated 22nd and 24th June 1885, respectively.

With reference to the above please state whether the estimates therein sanctioned under "Productive Public Works, Revenue Account, Extensions and Improvements," cannot be classified as "Capital," and be met from the saving of Rs. 13,279 on the completed work referred to in your office note, No. 195, dated 30th June 1885, as also from the balance of Rs. 1,011 reported as available for unforeseen works in G.O., No. 512 I., dated 10th June 1885.

2. Judging from the amounts of the estimates under reference, which exceed Rs. 2,500 in each case, and from the description of the works involved, they appear to constitute integral parts of the Godávari delta system. Their cost should therefore be debited to the Capital Account. Please see also G.O., No. 2482, dated 30th August 1875.

ORDER—dated 20th July 1885, No. 629 I., Public Works.

The estimates sanctioned in the proceedings of Madras Government marginally noted, under Productive Public Works, Revenue Account, Extensions and Improvements, will be classified as "Capital," the sum of Rs. 6,902 required to meet the cost of the works therein provided for being appropriated from the balance of the amount available for unforeseen works of the Godávari delta system, which will then be reduced to Rs. 4,048.

No. 551 I., dated 22nd June 1885.
" 556 I., " 24th " "

2. These sanctions have been registered as Nos. 88 I. and 89 I., and supersede the sanctions accorded in the proceedings of Madras Government above quoted.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 629 I.

JULY.

Estimates

Classification of — for certain works sanctioned in G.Os., Nos. 551 I. and 556 I., of 22nd and 24th June 1885, and provision of funds required for the works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

No. 128 I.

Note by the Chief Engineer for Irrigation.

The accompanying statement, showing the demands on the reserve for 1885-86 made by the several Superintending Engineers for incomplete works of 1884-85, for works sanctioned but not yet commenced, and for repairing flood damages, is submitted to Government with the following remarks.

PRODUCTIVE PUBLIC WORKS—CAPITAL ACCOUNT.

2. *Items* 1 *and* 2.—The amount required for items 1 and 2 may be transferred from the grant of Rs. 30,000 for the Korampalem tank surplus works, item 64 of part II of the Productive Public Works budget.

PRODUCTIVE PUBLIC WORKS—REVENUE ACCOUNT.

3. *Items* 3 *and* 4.—No funds are at present available to meet the demands for these items.

4. *Items* 5 *and* 6.—Rs. 21,259, the amount applied for, for expenditure in the Tanjore and Negapatam divisions for repairing flood damages to works in the Cauvery delta, may be transferred from the grant for the Kurnool canal under "Maintenance and Repairs."

5. *Item* 7.—The construction of the iron punt should be deferred to next year unless funds become available by surrenders later in the current year.

6. *Item* 8.—At page 26 of the current year's budget estimate for Productive Public Works, a sum of Rs. 1,000 has been provided for tools and plant required for the Cauvery delta under Revenue Account. The Superintending Engineer, VI Circle, should re-appropriate from this sum, which was intended for expenditure in the Negapatam division, the amount required for tools and plant in the Cauvery and Vennár Regulator division.

PUBLIC WORKS NOT CLASSED AS PRODUCTIVE—IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—CAPITAL ACCOUNT.

7. *Items* 9 *and* 10.—The Superintending Engineer, V Circle, should propose a re-appropriation of funds, to meet the amounts required for expenditure on items 9 and 10, from the existing grant of Rs. 40,000 for the Pálár anicut system.

REVENUE ACCOUNT.

8. *Item* 11.—The amount required for this item may be transferred from the existing grant of Rs. 6,000 for the Pálár anicut system, in the North Arcot division, under "Extensions and Improvements," the Superintending Engineer having surrendered Rs. 5,000 of this grant. The balance of the surrender, namely, Rs. 4,815, may be held in reserve.

9. *Items* 12, 13 *and* 14.—The Superintending Engineer, V Circle, originally applied for the following additional allotments under "Maintenance and Repairs":—

	RS.
Pálár anicut system, North Arcot division	30,000
Do. do. Chingleput division	326
Chembrambakam tank	14,067
Total ...	44,393

These demands being too large to be provided from the reserve or by re-appropriation of the existing grants, the Superintending Engineer was asked to report what portions of the grants were absolutely required. In reply, the Superintending Engineer has reported that Rs. 21,000 of the amount applied for for the North Arcot division and the whole of that applied for for the Chembrambakam tank are required, and that the amount required for the Pálár anicut system in the Chingleput division should be increased by Rs. 3,400 for repairing the Kuram tank. In the North Arcot division several works, which were damaged by floods, have to be repaired, and in the Chingleput division the Chembrambakam tank bund, which was also damaged by floods, has to be revetted. The amounts stated to be required cannot be fully allotted without prejudicially affecting the progress on other works. The following allotments are therefore recommended for sanction by transfer from the reserve under "Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept—Repairs":—

	RS.
Pálár anicut system, North Arcot division	10,000
Do. do. Chingleput division	2,000
Chembrambakam tank	8,000
Total ...	20,000

IRRIGATION AND NAVIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

Major Original Works.

10. *Items* 15 *to* 41.—The demands under this head amount to Rs. 80,176, as shown below:—

	Number of Works.	Amount.
		RS.
Nellore division	7	15,458
Chingleput do.	1	15,000
Coimbatore do.	4	14,168
South Arcot do.	1	1,968
North Arcot do.	1	2,078
Negapatam do.	1	980
Trichinopoly do.	2	1,720
Madura do.	1	1,352
Tinnevelly do.	10	27,452
Total ...	28	80,176

The reserve under Original Works is only Rs. 4,000, and the Superintending Engineer, V Circle, has surrendered Rs. 4,000 from the grant for Minor Original Works in the North Arcot division, making a total of Rs. 8,000 available for re-appropriation. It is recommended that this amount may be allotted to meet in part the demand made for the Konderu anicut, in the Cuddapah division, leaving Rs. 7,000 to be appropriated later on in the year should funds become available. For each of the items 24 and 25 there is a budget grant of Rs. 5,000 to work with to which no addition can be made in the absence of funds. The expenditure already incurred on items 29, 37 and 38 being small, the works can well be deferred until funds are available. The demands for the remaining items, aggregating Rs. 32,966, may be complied with by reducing the existing allotments for the following works:—

Divisions.	Works.	Budget Item No.	Existing Allotments.	Amounts reduced.
			RS.	RS.
Ganjam	Purushottapur channel improvements	8	1,300	1,300
South Arcot ...	Wállajápet tank improvements	15	15,000	6,000
Do. ...	Lower Coleroon anicut—improving under-sluices	16	6,600	600
Ganjam	Minor original works	...	8,000	2,000
Kistna, Eastern ...	Do. do.	...	1,500	466
	Total ...	...	...	10,366

AGRICULTURAL WORKS.

Major Original Works.

River Embankments.

Divisions.	Works.	Budget Item No.	Existing Allotments.	Amounts reduced.
			RS.	RS.
Godávari, Eastern ...	Gowtami Godávari left bank from Rajahmundry to Gunnaram	31	12,000	4,000
Do. do. ...	Godávari left bank from Purushottapatam to Rajahmundry	32	9,000	3,000
Kistna, Western ...	Kistna river right bank	42	8,120	2,000
Cuddapah	Cheyár embankment	45	7,557	2,000
Sangam	Pennér river left bank from Sangam ...	43	25,000	5,000
Trichinopoly ...	Coleroon left bank from Upper anicut to the Coleroon bridge	46	10,000	2,000
Tinnevelly	Támbraparni river right bank below Srívaikuntham anicut	49	...	4,600
		...	...	22,600
	Total ...	...	...	32,966

Minor Original Works.

11. *Items* 42 to 45.—The demands under this head amount to Rs. 21,887, as shown below:—

		RS.
Chingleput division	... ...	10,000
Negapatam do.	... ...	2,570
Trichinopoly do.	... ...	8,000
Madura do.	... ...	1,317
	Total ...	21,887

The Superintending Engineer, V Circle, proposes a transfer of the amount required for Minor Original Works in the Chingleput division from the grant for Tank Maintenance works. The transfer is not admissible under G.O., No. 16 I., dated 7th January 1885.

The following re-appropriations are recommended for sanction :—

Minor Original Works.

From	RS.	*To*	RS.
Ganjam division	2,000	Chingleput division	2,000
Cuddapah do.	500	Negapatam do.	1,000
Coimbatore do.	1,000	Trichinopoly do.	1,500
Salem do.	500		
Tinnevelly do.	500		
Total ...	4,500	Total ...	4,500

There are no funds at present available to meet the balance of the demands made for the Chingleput, Negapatam, and Trichinopoly divisions, and the demand for the Madura division.

Repairs.

12. *Items* 46 *to* 49.—The balance of the reserve under Repairs is only Rs. 10,570 after deducting the amounts required for appropriation to the Pálár anicut and Chembrambakam tank systems referred to in paragraph 9 above, while the demands aggregate Rs. 39,858, excluding Rs. 10,000, which the Superintending Engineer V Circle, has subsequently reported as not absolutely required for the North Arcot division. The grants for the following divisions may be reduced by Rs. 17,000:—

		RS.
Ganjam division	...	1,500
Godávari Eastern division	...	500
Do. Western do.	...	500
Kistna Eastern do.	...	500
Nellore do.	...	2,000
Bellary do.	...	2,000
Cuddapah do.	...	2,000
Kurnool do.	...	2,000
Coimbatore do.	...	2,000
Salem do.	...	1,000
Tinnevelly do.	...	3,000
	Total ...	17,000

If this amount be added to the balance of the reserve, the total amount available will be Rs. 27,570, which may be re-appropriated as follows:—

		RS.
Chingleput division	...	20,000
Madura do.	...	5,570
Negapatam do.	...	2,000
	Total ...	27,570

There are no funds at present available to meet the balance of the demands for the last two divisions, as also the amount applied for for the Vizagapatam division. The above re-appropriations will leave no balance for appropriation to the South Arcot division to meet the cost of repairing damages caused by the recent floods in the Vellar river for which funds will be provided, if possible, later.

Tools and Plant.

13. *Item* 50.—The cost of repairs and carriage of tools and plant required for Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept is chargeable to Provincial Funds, Roads and Buildings, as the former pays the latter a contribution at 1 per cent. on expenditure on works and repairs on account of general tools and plant. The amount required for tools and plant should therefore be included in the statement of demands on Provincial Funds, which will be disposed of in the general branch.

AGRICULTURAL WORKS.

Original Works.

14. *Item* 51.—The Superintending Engineer, II Circle, should suggest a transfer of funds to meet the demand made for expenditure on this item from the grants for some other works in his circle.

15. *Item* 52.—The amount required for expenditure on this item may be transferred from the budget grant for the following items :—

Budget Item No.	Name of Work.	Existing Grant.	Amount of Reduction.
		RS.	RS.
49	Támbrapatni right bank below Srivaikuntham anicut ...	15,400	3,759
50	Do. left bank do. do. ...	15,000	3,500
	Total ...	...	7,259

16. *Items* 53 *and* 54.—The amounts required for these items may be transferred from the existing grants for the following works :—

Budget Item No.	Name of Work.	Existing Grant.	Amount of Reduction.
		RS.	RS.
35	Gowtami Godávari and Vridha Gowtami Godávari right bank to Mokaltippa	5,000	1,143
47	Coleroon right bank from Valangudi to the Lower anicut.	7,000	7,000
48	Cauvery branches, raising embankments	3,709	3,709
	Total ...	...	11,852

17. *Item* 55.—The amount required for this item may be transferred from the current year's grant for the Vainatayam Godávari embankment, budget item No. 38, which the Superintending Engineer, I Circle, has wholly surrendered.

18. *Item* 56.—This work may be deferred for the present.

19. *Items* 57 *to* 60.—The reserve under Agricultural Minor Original Works is only Rs. 2,720, while the demands amount to Rs. 5,700. The following appropriations are recommended :—

River Embankments.

	RS.
Godávari Central division	1,000
Nellore do.	500
Tanjore do.	500
Negapatam do.	720
Total ...	2,720

Repairs.

20. *Items* 61 *to* 68.—There are no funds available to meet the demands, aggregating Rs. 49,179, for these items under Agricultural Repairs. The Superintending Engineers concerned should suggest re-appropriations from the existing grants to meet the urgent demands under this head.

21. *Item* 69.—As this item seems to be chargeable to the Godávari delta, the amount required should be met from the existing grant under "Maintenance and Repairs."

PROVINCIAL—IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—REVENUE ACCOUNT.

22. *Items* 70 *to* 73.—The Superintending Engineer, II Circle, has applied for Rs. 51,000 for repairs to the Buckingham canal, and for Rs. 1,200 for tools and plant required for the canal, in addition to the existing grants of Rs. 68,634 and Rs. 5,000, respectively. The current year's grant for ordinary maintenance and repairs to the Madras water-supply and irrigation extension project being Rs. 7,805 more than the amount required, this sum may be transferred to the Buckingham canal to meet in

part the demand under "Maintenance and Repairs" owing to the present restriction on expenditure; funds will not probably be available to meet the balance of the demand.

OOTACAMUND, 29th June 1885.

(Signed) J. O. HASTED, Colonel, R.E., Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

STATEMENT showing the demands on the Reserve for 1885-86 by the several Superintending Engineers for incomplete works of 1884-85, for works sanctioned but not commenced, and for repairing flood damages.

Circle.	Division.	Number of Item.	Works.	Amount of Estimate.	Number and Date of Sanction.	Expenditure to end of 1884-85.	Amount applied for 1885-86.	Amount appropriated.
			N. PRODUCTIVE PUBLIC WORKS.	RS.		RS.	RS.	RS.
			CAPITAL ACCOUNT.					
			Irrigation and Navigation.					
			SRIVAIKUNTHAM ANICUT SYSTEM.					
			Southern Section.					
			(3) Distributaries.					
			L. Earthwork.					
VI	Tinnevelly ..	1	Authur channel improving	4,551	G.O., No. 863 I., of 3rd Nov. 1883.	3,540	1,011	1,011
			N. Tanks and Reservoirs.					
		2	Vannankutham tank constructing ..	3,175	G.O., No. 32 I., of 10th Jan. 1885.	..	3,175	3,175
			Total ..	..		..	4,186	4,186
			G. PRODUCTIVE PUBLIC WORKS.					
			REVENUE ACCOUNT.					
			38. *Irrigation and Navigation.*					
I	Godávari Central	3	Extensions and improvements ..	..	....	..	5,000	..
	Do. Eastern.	4	Maintenance and repairs	..	....	..	15,000	..
VI	Tanjore ..	5	Do. do.	..	....	..	5,000	5,000
	Negapatam ..	6	Do. do.	..	....	..	16,259	16,259
			Total ..	..		..	41,259	21,259
			Tools and Plant.					
I	Godávari Eastern.	7	Iron punt	6,960	G.O., No. 444 I., of 2nd May 1884.	..	6,960	..
VI	Cauvery and Vennár Regulator division.	8	Tools and plant, repairs and carriage.	..	....	..	200	..
			Total ..	..		..	7,160	..
			H. PUBLIC WORKS NOT CLASSED AS PRODUCTIVE.					
			44. IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.					
			Capital.					
			PALAR ANICUT SYSTEM.					
			Northern Section.					
			Kambakal Channel.					
			(3) Distributaries.					
			N. Tanks and Reservoirs.					
V	Chingleput ..	9	Providing Kuram large tank with new stone revetment	6,100	G.O., No. 143 I., of 12th Feb. 1885.	2,066	4,034	..
			Southern Section.					
			Kambakal Channel.					
			(3) Distributaries.					
			N. Tanks and Reservoirs.					
		10	Tirupakuly tank—new stone revetment and weir	4,358	G.O., No. 342 I., of 31st March 1885.	..	4,358	..
			Total, Capital ..	..		..	8,392	..

Statement showing the demands on the Reserve for 1885-86, &c.—*cont.*

Circle.	Division.	Number of Items.	Works.	Amount of Estimate.	Number and Date of Sanction.	Expenditure to end of 1884-85.	Amount applied for 1885-86.	Amount appropriated.
			Revenue Account.	RS.		RS.	RS.	RS.
			Extensions and Improvements.					
			Pálár Anicut System					
	Chingleput ..	11	Providing bench-mark stone, &c., along the Kambakal channel.	620	S.E. Reg. No. 52 of 1884-85.	435	185	185
			Maintenance and Repairs.					
	North Arcot ..	12	Pálár anicut system	..	..	..	21,000	10,000
	Chingleput ..	13	Do. do.	..	..	..	3,726	2,000
	Do. ..	14	Chembrambakam tank system ..	..	..	..	14,067	8,000
			Total ..	..		..	38,793	20,000
			IRRIGATION AND NAVIGATION WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.					
			Original Works.					
			Major.					
II	Nellore ..	15	Improvements to Zaladanki tank ..	4,285	G.O., No. 985 I., of 3rd November 1884.	2,593	1,692	1,692
		16	Bagavole tank revetment	5,654	G.O., No. 605 I., of 2nd August 1883.	3,364	1,700	1,700
		17	Chillakur tank weirs Nos. 1 and 2 ..	5,650	G.O., No. 1144 I., of 19th Dec. 1884.	4,084	1,566	1,566
		18	Marapur large tank revetment, &c. ..	2,560	G.O., No. 791 I., of 26th Sept. 1883.	1,652	500	500
		19	Rapur do. do. ..	6,470	G.O., No 865 I., of 23rd Sept. 1884.	500	3,500	3,500
		20	Molaganur tank	..		..	2,500	2,500
		21	Muthialapad tank revetment, &c. ..	9,040	G.O., No. 733 I., of 14th August 1884.	..	4,000	4,000
III	Cuddapah ..	22	Constructing Kondur anicut and head-sluice to Indlur channel.	26,920	G.O., No. 390 I., of 22nd April 1885.	10,079	15,000	8,000
IV	Coimbatore ..	23	Improvements to the Chitrachavady channel and tanks supplied by it.	48,742	G.O., No. 490 I., of 20th May 1884.	46,578	2,164	2,164
		24	Improving the Thadampalliem tank.	11,810	G.O., No. 855 I., of 20th Sept. 1884.	5,017	1,793	..
		25	Improving the last 8⅜ miles of Pullapoliem channel.	26,415	G.O., No. 109 I., of 5th Feb. 1885.	12,127	9,288	..
		26	Constructing an aqueduct over a jungle stream and diverting a portion of the Kalingaroyen channel from $2\frac{5}{16}$ to $2\frac{9}{16}$ mile.	8,070	G.O., No. 708 I., of 5th August 1884.	7,147	923	923
V	South Arcot ..	27	Pombay channel—constructing two drops in the 2nd and 11th miles.	2,685	G.O., No. 815 I., of 9th October 1883.	717	1,968	1,968
	North ,, ..	28	Poiney flood-bank with a head-sluice to Vasoor spring channel.	3,190	G.O., No. 940 I., of 24th October 1884.	1,112	2,078	2,078
VI	Negapatam ..	29	Vellur tank improvements ..	2,600	G.O., No. 704 I., of 5th August 1884.	19	980	..
	Trichinopoly ..	30	Thiruthalayur tank improvements ..	4,340	G.O., No. 281 I., of 12th March 1884.	3,490	850	850
		31	Lower Peruvali channel head-sluice ..	7,320	G.O., No., 493 I., of 20th May 1884.	..	870	870
	Madura ..	32	Kurayur tank improvements ..	5,196	G.O., No. 178 I., of 17th Feb. 1885.	3,844	1,352	1,352
	Tinnevelly ..	33	Extending the surplus weir of the Watrap Periyakulam.	6,495	G.O., No., 335 I., of 30th March 1885.	5,519	976	976
		34	Periyur Periyakulam tank anicut and head-sluice.	6,050	G.O., No. 838 I., of 15th Sept. 1884.	..	5,340	2,532
		35	Melakalur tank—constructing ..	13,868	G.O., No. 723 I., of 5th Sept. 1883.	12,441	1,000	1,000
		36	Papankal channel—constructing a head-sluice for	4,940	G.O., No. 36 I., of 16th January 1884.	2,145	2,795	2,795
		37	Tenkarai tank improvements ..	3,205	G.O., No. 526 I., of 2nd June 1884.	723	1,782	..
		38	Kulasegara Periyakulam tank—reconstructing four sluices of the	3,265	G.O., No. 179 I., of 17th Feb. 1885.	291	2,974	..
		39	Virasigamani Periyakulam tank—raising revetment in.	2,585	G.O., No. 888 I., of 2nd October 1884.	..	2,585	..
		40	Vijianarayanam tank and channel—improving the	23,850	G.O., No. 188 I., of 20th Feb. 1885.	..	5,000	..
		41	Pavur channel and tanks—improvements to the	17,205	G.O., No. 134 I., of 10th Feb. 1885.	..	5,000	..
			Total ..	..		..	80,176	40,966

Statement showing the demands on the Reserve for 1885-86, &c.—*cont.*

Circle.	Division.	Number of Item.	Works.	Amount of Estimate.	Number and Date of Sanction.	Expenditure to end of 1884-85.	Amount applied for 1885-86.	Amount appropriated.
				RS.		RS.	RS.	RS.
V	Chingleput ..	42	Minor original works	..	....	..	10,000	2,000
VI	Negapatam ..	43	Do. do.	..	....	..	2,570	1,000
	Trichinopoly ..	44	Do. do.	..	....	..	8,000	1,500
	Madura ..	45	Do. do.	..	....	..	1,317	..
			Total ..	..		..	21,887	4,500
I	Vizagapatam ..	46	Repairs	..	....	..	2,000	..
V	Chingleput ..	47	Do.	..	....	..	30,000	20,000
VI	Madura ..	48	Do.	..	....	..	5,672	5,570
	Negapatam ..	49	Do.	..	....	..	2,186	2,000
			Total ..	..		..	39,858	27,570
	Do. ..	50	Tools and plant, repairs and carriage..	..	....	..	500	..
			Total ..	..		..	500	..
			AGRICULTURAL WORKS.					
			ORIGINAL WORKS—MAJOR.					
			River Conservancy.					
II	Kistna Western.	51	Constructing fifteen stone groynes at Penumudi.	13,360	G.O., No. 363 I., of 13th April 1885.	6,722	3,580	..
			River Embankment.					
VI	Tinnevelly ..	52	Támbraparni river left bank below Srivaikuntham anicut for 7½ miles.	47,872	G.O., No. 990 I., of 4th Dec. 1883.	40,613	7,259	7,259
	Tanjore ..	53	Cauvery-Arasalar left bank from road No. 5 to road No. 15—raising and widening the	8,810	G.O., No. 508 I., of 29th May 1884.	7,339	1,000	1,000
		54	Cauvery right bank—raising from Arasalar to Veerasholan	11,570	G.O., No. 677 I., of 23rd July 1884.	718	10,852	10,852
I	Godávari Central	55	Vasista Godávari left bank from below Gunnaram aqueduct.	28,535	G.O., No. 349 I., of 27th Sept. 1877.	14,815	3,000	3,000
		56	Fixing boundary stones on Godávari embankment.	2,700	G.O., No. 347 I., of 1st April 1885.	..	2,700	..
			Total ..	..		..	28,391	22,111
			River Embankment.					
II	Nellore ..	57	Minor original works	..	....	..	800	500
VI	Tanjore ..	58	Do. do.	..	....	..	800	500
	Negapatam ..	59	Do. do.	..	....	..	1,500	720
I	Godávari Central	60	Do. do.	..	....	..	2,600	1,000
			Total ..	..		..	5,700	2,720
			River Conservancy.					
I	Vizagapatam ..	61	Repairs	..	....	..	150	..
VI	Negapatam ..	62	Do.	..	....	..	4,000	..
	Cauvery and Vennár Regulator.	63	Do.	..	....	..	300	..
			River Embankment.					
I	Godávari Eastern	64	Repairs	..	....	..	10,000	..
	Do. Central	65	Do.	..	....	..	5,000	..
VI	Tanjore ..	66	Do.	..	....	..	1,937	..
	Negapatam ..	67	Do.	..	....	..	14,571	..
	Trichinopoly ..	68	Do.	..	....	..	12,000	..
			Miscellaneous.					
I	Godávari Eastern	69	Fencing Government ground near the Dowlaishweram head lock.	2,050	Sanctioned by Superintending Engineer.	829	1,221	..
			Total ..	..		..	9,179	..

Statement showing the demands on the Reserve for 1885-86, &c.—*cont.*

Circle.	Division.	Number of Item.	Works.	Amount of Estimate.	Number and Date of Sanction.	Expenditure to end of 1884-85.	Amount applied for 1885-86.	Amount Appropriated.
				RS.		RS.	RS.	RS.
			PROVINCIAL.					
			IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT—REVENUE ACCOUNT.					
			Maintenance and Repairs.					
II	Buckingham canal.	70	Maintaining the Buckingham canal ..	62,535	Register, No. 3 B.C., of 1884-85.	55,864	4,500	
		71	Repairing monsoon damages ..	38,590	Do. 51 B.C., do.	11,390	27,200	7,805
		72	Do. do. do. to southern canal from Adayar to Mercanam.	20,345	....	..	19,300	
			Total ..	..		..	51,000	7,805
			III. Tools and Plant.					
		73	Repairing boats, tools, instruments and carriage, &c.	..	....	..	1,200	..

ORDER—dated 20th July 1885, No. 631 I., Public Works.

The following transfers of funds are sanctioned :—

Productive Public Works.
Capital Account.
Srívaikuntham Anicut System.

From	RS.	*To*	RS.
North Main Channel.		South Main Channel.	
(2) N. Korampalem tank surplus works	4,186	(3) L. Authur channel improving ...	1,011
		N. Vennaukuthan tank	3,175
Total ...	4,186	Total ...	4,186

Productive Public Works.
Revenue Accounts.

From	RS.	*To*		RS.
Kurnool Canal.		Cauvery Delta.		
Maintenance and repairs	21,259	Maintenance and repairs	Tanjore ...	5,000
Establishment	4,890		Negapatam.	16,259
				21,259
		Establishment		4,890
Total ...	26,149	Total ...		26,149

Public Works not classed as Productive.
Irrigation and Navigation works for which Capital and Revenue Accounts are kept.
Revenue Account.

From	RS.	*To*	RS.
Pálár Anicut System.		Pálár Anicut System.	
Extensions and improvements—		Extensions and improvements—	
North Arcot division	5,000	Chingleput division	185
		Reserve	4,815
Total ...	5,000	Total ...	5,000

Irrigation and Navigation works for which neither Capital nor Revenue Accounts are kept.

Original Works.

From	RS.	*To*	RS.
Major Works.		Major Works.	
Ganjam—		Nellore : Zaladanki tank improvements	1,692
Purushothapatam channel improvements	1,300	Do. Bagavole tank revetment.	1,700
South Arcot—		Do. Cillakur tank weirs ...	1,566
Walajapet tank improving ...	6,000	Do. Marupur large tank revetment, &c. ...	500
Lower Coleroon anicut, under-sluice improvements	600	Do. Rapur large tank revetment, &c.	3,500
Minor Original Works.			
Ganjam Division	4,000	Do. Mulaganur tank improvements	2,500
Kistna Eastern Division	466		
North Arcot do.	4,000	Do. Muthialapad tank revetment	4,000
Cuddapah do.	500		
Coimbatore do.	1,000	Cuddapah : Kouderu anicut and head sluice	2,908
Salem do.	500		
Tinnevelly do.	500	Minor Original Works.	
Reserve	4,000	Chingleput division	2,000
		Negapatam do.	1,000
		Trichinopoly do.	1,500
Total ...	22,866	Total ...	22,866

Repairs.

From	RS.	*To*	RS.
Ganjam division	1,500	Chingleput division	20,000
Godávari Eastern division	500	Madura do.	5,570
Do. Western do.	500	Negapatam do.	2,000
Kistna Eastern do.	500		
Nellore division	2,000		
Bellary do.	2,000		
Cuddapah do.	2,000		
Kurnool do.	2,000		
Coimbatore do.	2,000		
Salem do.	1,000		
Tinnevelly do.	3,000		
Reserve	10,570		
Total ...	27,570	Total ...	27,570

Agricultural Works.

From	RS.	*To*	RS.
Original Works.		Original Works.	
Támbraparni right bank below Srívaikuntham anicut	3,759	Támbraparni left bank below Srívaikuntham anicut for 7½ miles ...	7,259
Támbraparni left bank below Srívaikuntham anicut	3,500	Cauvery Arasalar left bank raising and widening from road No. 5 to road No. 15	1,000
Coleroon right bank from Velangudi to the Lower anicut	7,000	Cauvery right bank raising from Arasalar to Veerasholam	10,852
Cauvery branches, raising embankments	3,709	Vasista Godávari left bank from below Gunnaram aqueduct	3,000
Vainateyam Godávari left bank	3,000	River Embankments.	
Gowtami Godavari and Vridha Gowtami Godávari right bank to Mokaltippa	1,143	Minor Original Works.	
Reserve	2,720	Godávari Central division	1,000
		Nellore division	500
		Tanjore do.	500
		Negapatam do.	720
Total ...	24,831	Total ...	24,831

Provincial.
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept—Revenue Account.

From	RS.	*To*	RS.
Maintenance and Repairs.		Maintenance and Repairs.	
Madras water-supply and irrigation extension project	7,805	Buckingham canal	7,805
Total ...	7,805	Total ...	7,805

2. The Government of India will be requested to sanction the following transfers of funds :—

H. Public Works not classed as Productive.
44. Irrigation and Navigation.

From

Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept

	RS.
Repairs—	
Reserve	19,839
Establishment	4,563
Tools and Plant	198
Total ...	24,600

To

Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.
Revenue Account.
Palar Anicut System.

		RS.
Maintenance and Repairs—		
North Arcot division ...	10,000	
Chingleput do. ...	2,000	
	12,000	
Establishment	2,760	
		14,760
Chembrambakam Tank.		
Maintenance and Repairs ...	8,000	
Establishment	1,840	
		9,840
Total ...		24,600

From

Agricultural Works.
Major Original Works.

	RS.
Godávari Eastern—	
Gowtami Godávari left bank from Rajahmundry to Yanam ...	4,000
Godávari left bank from Purushothapatam to Rajahmundry ...	3,000
Kistna Western—	
Kistna right bank	2,000
Sangam—	
Penner left bank from Sangam ...	5,000
Cuddapah—	
Cheyaur embankment	2,000
Trichinopoly—	
Coleroon left bank from the Upper anicut to the Coleroon bridge ...	2,000
Tinnevelly—	
Támbraparni river right bank below Srívaikuntham anicut	4,600
Total ...	22,600

To

Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.
Major Original Works.

	RS.
Cuddapah—	
Kouderu anicut and head-sluice ...	5,092
Coimbatore—	
Chittrachavady channel improvements	2,164
Kalingaroyen channel diversion and aqueduct over jungle stream.	923
South Arcot division—	
Pombay channel, two drops ...	1,968
North Arcot division—	
Poiney flood bank with head-sluice to Vasoor spring channel ...	2,078
Trichinopoly division—	
Tiruthalayur tank improvements ...	850
Lower Peruvelai channel and head-sluice	870
Madura division—	
Kurayur tank improvements ...	1,352
Tinnevelly division—	
Watrap Periyakulam surplus weir extension	976
Puruyur Periyakulam tank anicut and head-sluice	2,532
Melakalur tank	1,000
Papaunkal channel head-sluice ...	2,795
Total ...	22,600

3. The attention of the Superintending Engineers concerned will be drawn to the remarks made by the Chief Engineer for Irrigation in the foregoing note regarding works for which allotments have not been sanctioned.

4. Ordered that a copy of these proceedings be forwarded to the Government of India, with the request that the transfers of funds detailed in paragraph 2 above may be sanctioned.

(Here enter No. 632 I., dated 20th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To Superintending Engineers.
To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

ENDORSEMENT—dated 20th July 1885, No. 632 I., Public Works.

Forwarded accordingly.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 20th.

Recd. *Encl.*

G.O., 20th July 1885, No. 632 I.

JULY.

Funds

Forwarding copy of proceedings sanctioning certain transfers of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following letter from Lieutenant-Colonel J. PENNYCUICK, R.E., Superintendent of Works, Tank Maintenance Scheme, to the Chief Engineer for Irrigation, dated Chepâk, 10th July 1885, No. 1631 T. :—

In continuation of my letter, No. 1231 T., dated 5th June, recorded with G.O., No. 540 I., dated 19th June, I have the honor to report that during the month of June 38·908 millions of cubic feet of water have been supplied for irrigation from the Polal sluice of the Red Hills Tank, and 5·080 millions from the weir sluice, making a total of 43·988 millions during the month, and (including that supplied during April and May) 103·528 millions of cubic feet out of the total of 200 millions, the supply of which was authorised by G.O., No. 409 I., dated 30th April last.

2. In addition to the above, a quantity estimated by the Vice-President of the Madras Municipality at two millions of gallons per diem, or 9,600,000 cubic feet during the month, has been drawn off for the supply of the town of Madras.

3. On the 31st May the water-level in the tank stood at 34·14 above mean sea level, representing a storage of 721·420 millions of cubic feet, and on the 30th June the level was 33·53 and the storage 661·116 millions of cubic feet.

4. The reduction of storage during the month has therefore been 60·304 millions of cubic feet, of which 53·588 millions are accounted for above, the remaining 6·716 millions (representing a depth of ·07 of a foot on the present area of the tank) is the difference between the loss by evaporation and the supply received, which latter was considerable owing to the heavy rain on the 17th, 18th and 19th.

5. Since writing my report on the subject for April, I have heard from the Vice-President, Madras Municipality, that he estimates the amount drawn off by the municipality in April and May at one-and-a-half millions of gallons, or 240,000 cubic feet per day, making a total of 8·4 millions of cubic feet in the thirty-five days from 27th April to 31st May, instead of four millions, as estimated in paragraph 7 of my letter, and the loss by evaporation was therefore only 32·5 millions.

No. 131 I.

Submitted for the information of Government.

Ootacamund,
15th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 21st July 1885, No. 636 I., Public Works.

Recorded in continuation of G.O., No. 540 I., dated 19th June 1885.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy., to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" Superintendent of Works, Tank Maintenance Scheme.
" Chief Engineer for Irrigation.
" Revenue Department.
" Financial "

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 21st.

Recd. ***Encl.***

G.O., 21st July 1885, No. 636 I.

JULY.

Red Hills Tank

Report from the Superintendent of Works, Tank Maintenance Scheme, of the quantity of water in the — and the issues from it during June, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From Colonel W. H. BURTON, R.E., Officiating Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Chepâk, 15th May 1885, No. 642.

With reference to your notes of inspection printed in G.O., No. 259 I., dated 12th March 1885, I have the honor to submit, for sanction, estimates—

	RS.
(1) Constructing retaining-wall on wells for Pelandorai anicut ...	16,000
(2) Repairing damages caused by flood of December 1884	13,500

2. The Executive Engineer reports that he is now going on with the work in anticipation of sanction to the estimates. An expenditure of Rs. 1,363 was incurred in 1884-85 on the second item, and the balance of the estimate will be spent this year. The Executive Engineer also reports that a sum of Rs. 10,000 can be spent on the first item of constructing retaining-wall during the current official year.

Enclosure.

Pelandorai Anicut, New Work and Repairs.

Report (see also inspection notes to Superintending Engineer of 17th January 1885).

On the night of the 18th and 19th December 1884, the anicut breached and was swept away to its very foundations for a length of 174½ feet, measuring along line of body-wall, and of 214 feet, measuring along rear line of cutstone apron.

2. The hole scoured out in the gap was very deep. The roughstone apron for about 330 feet in length was also washed away.

3. After inspection (on 20th February 1885) by the Chief Engineer for Irrigation and Superintending Engineer, V Circle, it has been decided that the gap shall be closed by a roughstone dam 6 feet wide at top with a front slope of 1 to 1 and a rear slope of 3 to 1, as shown on the accompanying plan, and that, to prevent destruction from "cutting back," a line of wells going down to 28·40 feet below anicut crest, or 17·40 feet below level of lowest step of cutstone apron of existing structure, shall be sunk at 68 feet (to centre of wells) from line of rear toe of body-wall of existing structure.

4. This position for the line is decided on so that the wells may be carried right across the river clear of all existing permanent work, and also just clear of the "crate wall" in the roughstone apron.

5. The spaces between these wells will be closed with good jungle wood piles, and on the wells will be built a solid retaining-wall, 3 feet in height, to hold the roughstone apron.

The plan shows the piles much smaller than the spaces between the wells. This should not be. The piles should close the spaces.

(Initialed) J. O. H.

6. It is not expected that in the season of 1885 it will be possible to get down the whole row of wells right across the river, but those across the gap will be put down, and then, when leaving them for the season, they will be connected with the existing apron by similar wells running at right angles to the line.

Cuddalore, (Signed) G. T. WALCH,
18th March 1885. Executive Engineer.

Memorandum to Superintending Engineer, V Circle, dated 22nd May 1885, No. 20 S.A.
Letter from „ „ „ „ 26th June „ „ 1252.

No. 129 I.

Submitted to Government with the recommendation that the estimates, amounting to Rs. 16,000 and 13,500, respectively, for constructing a retaining-wall to the Pelandorai anicut, and for repairing the damages caused to the anicut by the flood of December 1884, may be sanctioned.

2. The balance of the amount surrendered from the grant for the Pálár anicut system, in the North Arcot division, under Extensions and Improvements, namely, Rs. 4,815, may be transferred to the Pelandorai anicut system for expenditure in constructing the retaining-wall. The Superintending Engineer should also appropriate to this work the budget grant of Rs. 3,000 for the Pelandorai anicut system under Extensions and Improvements, leaving the balance of the amount applied for to be allotted later on in the year when funds become available by surrenders.

3. The amount required for repairs to the Pelandorai anicut, which should be carried out without delay, is in round numbers Rs. 12,000, or Rs. 14,760 including establishment charges. It is recommended that this amount may be appropriated from the sum of Rs. 50,000 transferred in G.O., No. 3413, R.D., dated 4th July 1885, from the grant for minor irrigation works to that for Imperial works.

Ootacamund, (Signed) J. O. HASTED, Colonel, R.E.,
13th July 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 21st July 1885, No. 637 I., Public Works.

The estimates, amounting to Rs. 16,000 and 13,500, respectively, for constructing a retaining-wall to the Pelandorai anicut, and for repairing damages caused to the anicut, are sanctioned as follows :—

Public Works not classed as Productive.
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.
Revenue Account.
Pelandorai Anicut System.

	RS.
Extensions and Improvements.	
Pelandorai anicut retaining-wall	16,000
Maintenance and Repairs.	
Pelandorai anicut repairs	13,500

2. This sanction has been registered as No. 90 I. of 1885-86.

3. The following transfers of funds are sanctioned :—

Public Works not classed as Productive.

From	RS.	*To*	RS.
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.		Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.	
Revenue Account.		Revenue Account.	
Pálár Anicut System.		Pelandorai Anicut System.	
North Arcot Division.			
Extensions and Improvements ...	4,815	Extensions and Improvements ...	4,815
Establishment	1,107	Maintenance and Repairs	12,000
		Establishment	3,867
	5,922		
Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.			
Reserve	14,760		
Total ...	20,682	Total ...	20,682

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle, with enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts, with two duplicate abstract estimates.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 21st.

Recd. *Encl.*

G.O., 21st July 1885, No. 637 I.

JULY.

Pelandorai Anicut

Estimates for a retaining-wall to the —, and for repair of damages caused to the anicut, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

No. 76 C.

Report on estimates, amounting to Rs. 10,020, for four minor distributaries from the Central channel, Sangam project.

As originally sent up, the estimates for these four channels amounted to Rs. 14,121, but the earthwork was over-estimated, and I was able to suggest a few alterations.

2. The cost is still heavy; but high ridges have to be cut through to reach the land to be irrigated, and expensive culverts have to be built where the channels cross the Dorenal road.

3. The total area proposed to be supplied is as follows:—

					ACRES.
Channel	from 3rd	mile sluice,	right	... ...	700
Do.	from 3rd	do.	left	... ...	700
Do.	from 4th	do.	right	... ...	580
Do.	from 4th	do.	left	... ...	650
				Total ...	2,630

4. The estimate provides for the requisite land compensation. The masonry designs are suitable and the rates throughout fair.

5. The cost of these channels will have to be met from the balance available under unforeseen works. Sanction to the estimates and an allotment of funds from the above source is recommended.

Sangam,
9th July 1885.

(Signed) J. W. RUNDALL,
Superintending Engineer, II Circle.

To the Chief Engineer for Irrigation, Madras.

Enclosure.

Abstract, Classified.

Sub-head.	Names of works.	Amount of estimate for individual work.	Total of sub-heads.	Total for each canal or distributary.	Total of each main head.	Remarks.
1	2	3	4	5	6	7
	N. Capital Expenditure on Irrigation Works not charged against Revenue. 51. Irrigation and Navigation. Sangam Anicut Project. I. Works. (3) Distributaries. Central Channel. Minor channel from 3rd mile sluice R.B.	RS.	RS.	RS.	RS.	
B. Land ..	1. Compensation for land	595	595			
L. Earthwork ..	2. Excavation and banking	1,990	1,990	2,585		
	Minor channel from 3rd mile sluice L.B.					
B. Land ..	3. Compensation for land	190	190			
C. Works ..	4. Culvert at 911 feet of minor channel..	815	815			
L. Earthwork ..	5. Excavation and banking	1,770	1,770	2,775		
	Minor channel from 4th mile sluice R.B.					
B. Land ..	6. Compensation for land	635	635			
L. Earthwork ..	7. Excavation and banking	1,960	1,960	2,595		
	Minor channel from 4th mile sluice L.B.					
B. Land ..	8. Compensation for land	415	415			
C. Works ..	9. Culvert at 1,739 feet of minor channel.	675	675			
L. Earthwork ..	10. Excavation and banking	975	975	2,065		
				10,020		

Sangam,
21st June 1885.

(Signed) A. A. G. MALET,
Executive Engr., Sangam Project Divn.

9th July 1885.

(Signed) J. W. RUNDALL,
Superintending Engineer, II Circle.

No. 132 I.

Submitted to Government with a recommendation that the estimates forwarded by the Superintending Engineer may be sanctioned.

Ootacamund,
17th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 21st July 1885, No. 638 I., Public Works.

The estimates, amounting to Rs. 10,020, as detailed in the foregoing classified abstract, for four minor distributaries from the Central channel of the Sangam anicut project, are sanctioned from the balance of the lump sum provision in the Sangam anicut project estimates for unforeseen works, which will then be reduced to Rs. 23,450.

2. This sanction has been registered as No. 91 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle, with fourteen enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 21st.

Recd. *Encl.*

G.O., 21st July 1885, No. 638 I.

JULY.

Sangam Anicut Project

Estimates for minor distributaries from the Central channel of the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

Letter from the Superintending Engineer, II Circle, dated 27th June 1885, No. 44 C.						
Telegram to	„	„	II	„	„ 9th July „	
Letter from	„	„	II	„	„ 7th „	„ No. 68 C.

No. 130 I.

Note by the Chief Engineer for Irrigation.

The Superintending Engineer, II Circle, having arranged with the Revenue Department for the Kanigiri reservoir, connected with the Sangam anicut project, being run dry this season for the purpose of embanking and revetting it, has applied for an allotment of Rs. 28,000, in addition to the existing grant of Rs. 32,050, so that the work may be completed this year in order to avoid the necessity for emptying the reservoir again next year, which would involve a sacrifice of revenue. For meeting in part this demand, he has surrendered Rs. 10,000 from the grant for works of the Kistna delta, and a similar amount may, it is recommended, be transferred from the grant for the Godávari delta works, leaving Rs. 8,000 to be provided later on in the year when funds become available by surrenders.

Ootacamund,
15th July 1885.

(Signed) J. O. HASTED, Colonel R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 21st July 1885, No. 639 I., Public Works.

The following transfers of funds are sanctioned:—

N. Capital expenditure on Irrigation Works not charged against Revenue.

From		RS.	*To*	RS.
Godávari Delta.			Sangam Anicut Project.	
Works	10,000		(2) N. Kanigiri Reservoir.	
Establishment	2,300		Earthwork and revetments	20,000
		12,300	Establishment	4,600
Kistna Delta.				
Works	10,000			
Establishment	2,300			
		12,300		
	Total ...	24,600	Total ...	24,600

2. The Superintending Engineers, I and II Circles, will submit statements showing the distribution by component works of the amounts reduced from the grants for the Godávari and Kistna deltas.

3. The following deferred telegram will be sent to the Executive Engineer, Sangam division, a copy thereof being communicated to the Superintending Engineer, II Circle, for information :—

"Kanigiri reservoir grant increased from Rs. 32,050 to 52,050. Proceed with work."

4. Ordered that a copy of these proceedings be forwarded to the Government of India.

(Here enter No. 640 I., dated 21st July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" " " II "
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 21st July 1885, No. 640 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 21st.

Recd. *Encl.*

G.O., 21st July 1885, No. 640 I.

JULY.

Funds

Forwarding copy of proceedings sanctioning certain transfers of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From Major G. F. L. MARSHALL, R.E., Under Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 24th April 1885, No. 83 I.

I am directed to acknowledge the receipt of your letter, No. 235 I., of 6th March 1885, forwarding the Statement of Irrigation and Rainfall in the Madras Presidency during 1883-84.

2. With reference to your request, that the date prescribed for the submission of the statement may be extended from 1st August to 1st October, in order to ensure uniformity between the returns for the official and "fasli" year, I am directed to remark that it is believed that irrigation from canals practically ceases in Madras in the beginning of March, and recommences about the middle or end of June, and that almost all irrigation in June of any "fasli" year is included in "the tabulated irrigation revenue returns" of the *next* "fasli" year. If this be the case, the statements of irrigated areas for any *official* year ought to correspond pretty closely with those for the nearest corresponding *fasli* year, and the irrigation revenue returns of the latter to represent very closely the irrigation revenue returns of the nearest corresponding official year.

3. I am also directed to state that the Government of India considers any change in the direction proposed by the Madras Government to be very undesirable. I am, therefore, to inquire if the assumptions in paragraph 2 are not in the main correct, and sufficiently so for all practical purposes, and, if not, to what extent the irrigated areas and revenues of nearest corresponding official and "fasli" year would be liable to differ.

4. Finally, I am to draw attention to the very great delay which has occurred in the submission of the statement under acknowledgment, and to request that measures may be adopted to ensure its being punctually forwarded in future.

Endorsement, dated 2nd May 1885, No. 72 E., Public Works.

Proceedings of Madras Government, dated 30th June 1885, No. 3305, Revenue.

ORDER—dated 22nd July 1885, No. 641 I., Public Works.

Ordered that the following letter be sent to the Government of India:—

(Here enter No. 642 I., dated 22nd July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 22nd.

Recd. *Encl.*

G.O., 22nd July 1885, No. 641 I.

JULY.

Irrigation and Rainfall

Orders on letter from the Government of India declining to alter the date for the submission of the statement of —.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Letter—from

Colonel J. O. HASTED, R.E.,
Joint Secretary to the Government of Madras,
Public Works Department,
Irrigation Branch,

To

The SECRETARY to the GOVERNMENT of INDIA,
Public Works Department,
(Irrigation).

Sir,

In reply to your letter, No. 83 I., dated 24th April 1885, I am directed to state that the cultivation accounts are generally closed with March, and the orders require that all cultivation between that date and the end of the fasli or the revenue year ending 30th June shall be added to the cultivation up to the end of March, if the crop is harvested before the 1st July. Where the crop is not harvested within the fasli, the cultivation after March is brought to the accounts of the next fasli year.

Under this system there ought not, as stated by you, to be much difference between the actual cultivation of the official and the fasli year, but in practice, it has been found impossible to avoid discrepancies between the irrigated area shown in the irrigation and rainfall statement and that reported for the fasli year, owing to the early date at which the former account has to be despatched from the taluks, correct figures not being available until after the close of the fasli.

2. The delay in the submission of the statement of irrigation and rainfall for 1883-84, to which you refer, is due to the attempt to reconcile these discrepancies, which entailed considerable correspondence.

3. As, however, the Government of India object to any alteration in the date of submission of the statement, I am to say that this Government will adhere to the date originally fixed for its submission, and will endeavour to make the statement as correct as possible under the circumstances.

I have the honor to be,
Sir,
Your most obedient servant,

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

Ootacamund,
22nd July 1885.

IRRIGATION.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 22nd.

Recd. *Encl.*

22nd July 1885, No. 642 I.

JULY.

Irrigation and Rainfall

Affording information in connection with the statement of — and stating that endeavour will be made for its punctual submission.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From the Superintending Engineer, VI Circle, dated 11th July 1885, No. 557 T.J.

No. 134 I.

Note by the Chief Engineer for Irrigation.

The Superintending Engineer, VI Circle, applied, in his letter, No. 294 T.J., dated 22nd May 1885, for the following special grants for repairing damages caused last year to irrigation and agricultural works by floods:—

		RS.
Productive Public Works. Revenue Account. Maintenance and Repairs.		
1. Tanjore	5,000	
2. Negapatam	16,259	
		21,259
Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.		
3. Minor original works, Madura division	1,317	
4. Repairs, Madura division	5,672	
5. Repairs, Negapatam division	2,186	
		9,175
Agricultural Repairs. River Embankments.		
6. Tanjore	1,937	
7. Negapatam	14,571	
8. Trichinopoly	12,000	
		28,508
	Total ...	58,942

2. The amounts for items 1 and 2 as well as Rs. 5,570 of the demand for item 4 and Rs. 2,000 of that for item 5 have been sanctioned, while no allotments have been recommended for the remaining items owing to want of funds. The Superintending Engineer having, however, in a subsequent letter, No. 557 T.J., dated 11th July 1885, reported that the budget grant of Rs. 15,000 for the Negapatam division, under repairs to river embankments, was nearly worked out and that the additional allotment of Rs. 14,571 previously applied for is urgently required to admit of the works now in progress being completed, it is recommended that Rs. 6,000, or Rs. 7,440 including

the percentage charges for establishment and tools and plant, may be allotted from the balance of the amount transferred in G.O., No. 3413,* Revenue Department, dated 4th July 1885, from the grant for minor irrigation works to that for Imperial works, the necessity for a further allotment of funds being considered later on in the year.

* Communicated with G.O., No. 598 I., Public Works, dated 10th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

OOTACAMUND,
15th July 1885.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 23rd July 1885, No. 643 I., Public Works.

The following transfer of funds is sanctioned:—

H. Public Works not classed as Productive.

From Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.	RS.	*To* Agricultural Works River Embankments. Repairs.	RS.
Reserve	7,440	Negapatam division	6,000
		Establishment	1,380
		Tools and plant	60
Total ...	7,440	Total ...	7,440

2. Ordered that the following deferred telegram be sent to the Superintending Engineer, VI Circle:—

"Your letter, No. 557 T.J., dated 11th July 1885. Grant for repairs, river embankments, Negapatam division, increased from Rs. 15,000 to 21,000."

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 23rd.

Recd. *Encl.*

G.O., 23rd July 1885, No. 643 I.

JULY.

Funds

Certain transfer of —, sanctioned.

GOVERNMENT OF MADRAS,

PUBLIC WORKS DEPARTMENT:

Irrigation.

READ—the following letter from J. B. PENNINGTON, Esq., Collector of Tanjore, to the Secretary to Government, Public Works Department, dated Vallam, 16th July 1885, No. 4393:—

I have the honor to inform you that a piece of land measuring 82$\frac{7}{8}$ cents, in the villages of Alathambadi and Nathappallam, is required for closing the breaches in the Harichandranadi river; and, as it is desirable, in order to ensure to Government an indefeasible title, to acquire the land under the provisions of the Land Acquisition Act X of 1870, I herewith forward a draft declaration, under section 6 of the Act, that it is needed for a public purpose, and request that you will be good enough to order the same to be published in the *Fort St. George Gazette.*

ORDER—dated 27th July 1885, No. 647 I., Public Works.

Ordered that the declaration be published in the *Fort St. George Gazette.*

2. The Collector of Tanjore will take order for the acquisition of the land in accordance with the provisions of Act X of 1870.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Revenue Department.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 27th.

Recd. *Encl.*

G.O., 27th July 1885, No. 647 I.

JULY.

Land

Orders for acquisition of — required for closing the breaches in the Harichandranadi river, Tanjore district.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

Proceedings of the Board of Revenue, dated 15th July 1885, Mis. No. 6419.

Read—the following letter from M.R.Ry. W. VENKATAPPIAH, Temporary Deputy Collector, to the Collector of Ganjam, dated Berhampore, 24th June 1885, No. 245 :—

I have the honor to inform you that the period of twelve months sanctioned in G.O., dated 17th November 1884, No. 1026 I.,* for the retention of the temporary establishment entertained under me will expire with the 30th instant, and therefore request that you will be pleased to recommend the retention of the establishment for a further period of at least twelve months for reasons stated below.

* Communicated with Board's proceedings, dated 9th December 1884, Mis. No. 11639.

2. Applications are now received from the Public Works Department for land in unsurveyed tracts required for the canal. Out of the land already applied for there is a large extent † still to be handed over to the Public Works Department both in surveyed and unsurveyed tracts. Even in surveyed tracts sub-division of survey fields in order to ascertain the exact extent of each individual holding appears necessary in several cases.

† *Vide* statement enclosed. Acres 1,272 cents 82 land yet to be handed over to the Public Works Department; acres 1,393 cents 43 land yet to be compensated for.

3. The details of work to be done in the field as well as in the office are described in the abstract statement of work forwarded to you with my letter, dated 24th September 1884, No. 234. In addition to the work so described, the following work has devolved on my establishment in consequence of the amount of Rs. 40,000, the current year's grant for compensation of lands, having been placed at my disposal by letters of credit and of the recent orders of the Board of Revenue regarding conveyance deeds, endorsements on puttahs and contracts of sales (*vide* Board's proceedings, dated 23rd May 1885, Mis. No. 4876, and 16th April, Mis. No. 3462):—

(1) Issuing cheques.
(2) Maintaining a cash-book in which all receipts and individual payments, whether in cheques or ready cash, should be recorded.
(3) At the end of each ten days an extract from the cash-book together with compensation bills and vouchers obtained from the parties should be forwarded to the Executive Engineer.
(4) At the end of each month a statement in two parts, showing actual cash balance in hand, should be sent to the Executive Engineer.
(5) Maintaining a register of personal deposits. This register shows all items that may be lying undisbursed after being debited to regular head.
(6) Preparing conveyance deeds in Oriya for lands costing above Rs. 100.
(7) Writing endorsements in Oriya on puttahs produced by the owners of the land.
(8) Writing endorsements in English on puttahs produced.
(9) Maintaining two registers of conveyance deeds executed by parties, one showing the deeds relating to each village and the other showing the deeds executed on each day.

4. At the time of settling and paying compensation the duties numbered 2, 6, 7 and 8, as well as obtaining receipts from parties in the new forms supplied by the Public Works Department, and making extract from cash-book as directed by Executive Engineer, should be done simultaneously by the establishment, for which not less than four hands will invariably be needed.

5. On experience I find the undermentioned additional work to be necessary—

(1) Preparing awards for land taken up under the Act. Copies of these awards should be furnished to the Executive Engineer.
(2) Preparing proceedings with copies referring cases to the district court under the Act.
(3) Examining trees, houses, tanks, wells, &c., in land, whether surveyed or not, for which compensation should be invariably paid.
(4) Annual statement showing revenue lost to Government.
(5) Errata lists such as those submitted to you with my letter, dated 31st March 1885, No. 157. One list shows the corrections to be made in the diglott registers and the other shows the corrections to be made in the inam excess statements.

6. Above all at each stage of compensation business, calculation work is the most tedious one, which occupies a good deal of time and the difficulties of which need no explanation.

7. I beg to mention here that out of Rs. 1,776 sanctioned for the establishment in the Government order above referred to, for twelve months at Rs. 148 a month, an amount of Rs. 1,377 and odd has been expended, and the balance, Rs. 398 and odd, is a saving to Government. This saving was effected chiefly by vacancies not being filled up until necessity arose as work increased.

8. In conclusion, I beg to add that, as soon as all the land required for Surada and Russellkonda reservoirs is made over to the Public Works Department, and the work connected therewith is completed, so much establishment as may be found unnecessary will be discontinued within the next twelve months unless an additional work is thrown in the meantime on me to require the services of the whole establishment.

9. If the usual wet area of zemindari lands affected by the canal be measured by the temporary establishment as seems to be your intention, from your letter, dated 22nd instant, No. 2116, the amount of work devolving thereby on them is so great that they will have to be kept on for an indefinite period.

10. If I remember right, I believe you applied for a separate establishment for this purpose and the matter is under the contemplation of the Board and Government.

11. The reasons for not completing the work before 30th June as expected before are that in many cases private negotiation was found impossible and the whole of land required for canal has not been applied for by the Public Works Department as anticipated ; the measurement of four whole inam villages has been delayed owing to the absence of parties concerned, of whom there are many residing in various taluks.

12. I further beg to state that although the land remaining to be handed over to the Public Works Department and to be compensated for appears comparatively small in extent, yet it is the area to deal with which there is too much trouble owing to the recent orders as to sale-deeds and cash-books, &c. It is further to be noted that the land already handed over includes a large area of waste and poramboke for which no compensation was necessary, and service inams for which there is no difficulty to settle compensation, whereas what remains to be settled is all to be paid for by ready-money and to be settled with several individuals among whom there are innumerable disputes of various kinds.

Endorsement on the above.

No. 2271.

Submitted to Government, through the Board of Revenue, with the recommendation that, for the reasons given by the deputy collector, the temporary establishment in question may be sanctioned to continue for another year.

2. A portion of the temporary establishment was entertained on 24th May 1884 in anticipation of sanction, so the period of twelve months sanctioned in the Government order quoted by the deputy collector must be considered to have expired in May 1885.

3. I have authorised the deputy collector to continue the establishment pending the orders of Government, as otherwise work will be impeded.

4. With reference to paragraph 9 of the deputy collector's letter, I beg to state that I do not propose to get the work of measuring the zemindari wet lands, the irrigation sources for which have been or will be interfered with by the Rushikulya canal, done by the temporary establishment under the deputy collector. A separate establishment has been applied for for the purpose, and the question is under the consideration of Government (*vide* G.O., dated 15th May 1885, No. 2472, Revenue, communicated with Board's proceedings, dated 22nd idem, Mis. No. 4819). Only one application, from the zemindar of Sergada, requesting that when the canal is finished the water thereof may be given free of charge to acres 69 of his wet land the irrigation sources for which have been interrupted by the canal, and that in the meantime compensation may be given annually for the loss of water, has been forwarded to the deputy collector with a view to ascertain how far the estimated extent given by the zemindar differs from the extent which may be ascertained by actual measurement.

CHATRAPUR,
3rd July 1885.

(Signed) J. G. HORSFALL,
Collector.

Resolution—dated 15th July 1885, Mis. No. 6419.

Submitted for the favorable consideration of Government.

(True Copies and Extract.)

(Signed) E. GIBSON,
Secretary.

ORDER—dated 27th July 1885, No. 648 I., Public Works.

The retention, for a further period of twelve months, of the temporary establishment, sanctioned in G.O., No. 1026 I., dated 17th November 1884, to work under the special deputy collector for expediting the acquisition of land required for the Rushikulya project, in the Ganjam district, is sanctioned.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of {1885} Madras

PUBLIC WORKS.

Dated July, 27th.

Recd. *Encl.*

G.O., 27th July 1885, No. 648 I.

JULY.

Temporary Establishment

Retention of the — for expediting the acquisition of land required for the Rushikulya project for twelve months longer, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

No. 136 I.

Note by the Chief Engineer for Irrigation.

The following allotments from the balance of the amount transferred from the grant for minor irrigation works to that for Imperial works are recommended for sanction in addition to those sanctioned in G.O., No. 631 I., dated 20th July 1885, to meet in part the urgent demands for funds for expenditure in repairing the damage caused to irrigation and agricultural works during the floods of last year :—

H. Public Works not classed as Productive.
44. Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.
Revenue Account.
Pálár Anicut System.

		RS.
Maintenance and repairs—		
North Arcot division	5,000	
Establishment	1,150	
		6,150
Works for which neither Capital nor Revenue Accounts are kept.		
Repairs—		
Chingleput division	5,000	
Establishment	1,150	
Tools and plant	50	
		6,200
Agricultural Works. River Embankments.		
Repairs—		
Trichinopoly division	5,000	
Establishment	1,150	
Tools and plant	50	
		6,200
	Total ...	18,550

2. The balance still available for appropriation will be Rs. 9,250.

OOTACAMUND,
21st July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 27th July 1885, No. 649 I., Public Works.

The additional allotments proposed by the Chief Engineer for Irrigation are sanctioned.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle.
" " " VI "
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 27th.

Recd. *Encl.*

G.O., 27th July 1885, No. 649 I.

JULY.

Funds

Additional — allotted for expenditure in repairing damages caused to works during the floods of last year.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

No. 137 I.

Note by the Chief Engineer for Irrigation.

The Government of India having reduced the current year's grant from Imperial funds under "44. Irrigation and Navigation" by two lakhs, it is found impossible to provide by re-appropriation the amounts required for incomplete works and for the repairs of flood damages caused to irrigation works in the southern districts of this presidency during the extraordinary floods of last year. The balance of the demands made by the Superintending Engineers remaining to be complied with is Rs. 1,85,597 as shown below :—

——	Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.	Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.	Agricultural Works.	Total.
	RS.	RS.	RS.	RS.
Major works	...	39,210	6,280	45,490
Minor "	...	17,387	2,980	20,367
Repairs	18,793	12,288	49,179	80,260
	18,793	68,885	58,439	1,46,117
Establishment	8,922	15,844	13,441	38,207
Tools and plant	...	689	584	1,273
Total ...	27,715	85,418	72,464	1,85,597

2. A sum of Rs. 50,000 has recently been transferred from the grant for minor irrigation works to that for Imperial works, and Rs. 14,760 of this amount have been appropriated for repairing the Pelandorai anicut, which sustained serious damage during the floods of last year, leaving only Rs. 35,240 for meeting the demands. Further damages were sustained by irrigation works in the South Arcot division on the occasion of the recent floods in the Vellár river, and the grant for that division will therefore require to be supplemented. Under the present restrictive orders no application for additional funds can be submitted to the Government of India, and although transfers from the grant for Tank Maintenance works to that for ordinary works are prohibited by the Government of India, in their letter, No. 131 A.I., dated 19th December 1884, it is suggested that the Government of India may be requested to sanction, under the exceptional circumstances, a transfer of Rs. 98,580 from the

Tank Maintenance grant, as shown below, to meet the more urgent demands for funds for ordinary works :—

		RS.
Original Works.		
Madura ...	5,000	
Chingleput ...	5,000	
Kurnool ...	1,500	
		11,500
Repairs.		
Madura division ...	29,000	
Chingleput „ ...	29,000	
Kurnool „ ...	10,000	
		68,000
	Total ...	79,500
Establishment ...		18,235
Tools and plant ...		795
		98,580

3. These amounts can be spared from the grant for Tank Maintenance Scheme, as the attention of the establishment in the Madura and Chingleput divisions will be greatly taken up during the current year in repairing damages caused to ordinary works by floods, while estimates for works in the Kurnool division have not yet been prepared owing to No. 3 Tank division having been formed only this year.

OOTACAMUND, (Signed) J. O. HASTED, Colonel, R.E.,
21st July 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 27th July 1885, No. 650 I., Public Works.

The Government of India will be requested to sanction a transfer of Rs. 98,580 from the current year's grant for Tank Maintenance works to that for ordinary works as a special case in consideration of the fact that, notwithstanding the serious damages which occurred to irrigation works in the southern districts of this presidency by the extraordinary floods of last year, the current year's grant under "44. Irrigation and Navigation" has been recently reduced by two lakhs.

2. Ordered that a copy of these proceedings be forwarded to the Government of India with a request that the sanction to the proposed transfer of funds may be communicated by wire.

(Here enter No. 651 I., dated 27th July 1885.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, III Circle.
„ „ „ V „
„ „ „ VI „
„ Superintendent of Works, Tank Maintenance Scheme.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

ENDORSEMENT—dated 27th July 1885, No. 651 I., Public Works.

Forwarded.

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 27th.

Recd. *Encl.*

G.O., 27th July 1885, No. 651 I.

JULY.

Funds

Requesting sanction to certain transfer of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. W. RUNDALL Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Buckingham Canal, 13th July 1885, No. 89 C:—

I have the honor to bring to your notice that Rs. 5,000, in addition to the present grant of Rs. 20,000 for the Pennér left bank from Sangam to the Moldévi, are required to enable a definite section of the embankment to be made effective and safe.

2. It is necessary to close the Panchédu and Kovur river heads this year, and to complete the earthwork in the 7th to 11th miles, and to build the outfall sluices in the 9th and 14th miles. If this be done, the channel, &c., already constructed in connection with the Sangam works will be protected.

3. I have gone through the figures with Mr. Malet and find to accomplish this much will require Rs. 25,000, whereas only Rs. 20,000 has been given for the current year.

4. If Government will be pleased to sanction a transfer of funds from repairs to original works, the money can be obtained from the grant of Rs. 10,000 for closing the breach in the 13th mile of the Pennér right bank, sanctioned in G.O., No. 362 I., dated 31st March 1884.

5. The Executive Engineer, Nellore, reports that he has not been able to start this work because the small area of sandy ground required for the work has not been made over to him. Application for the land was made on the 24th June 1884, and the Executive Engineer has sent three reminders urging the necessity for the land being acquired at once, but he has not got it. Rs. 5,000 can therefore be surrendered from this work to be made available for the construction of the left embankment.

6. I consider it very necessary that work on the left embankment to the extent mentioned should be carried out before October, and would request the favor of orders being sent to me by wire, if the proposed transfer of funds is sanctioned.

ORDER—dated 28th July 1885, No. 654 I., Public Works.

The existing grant for the Pennér river left bank from Sangam to Moldévi is only Rs. 15,000, Rs. 5,000 having been transferred to meet urgent demands for funds for incomplete works of last year.

2. The transfer of Rs. 5,000 to this work from the grant for repairs to river embankments in the Nellore division is sanctioned, whereby the grant for the

embankment will be raised to Rs. 20,000. If an additional allotment be required for this work, the Superintending Engineer should suggest a further transfer from the grants for other divisions in his circle.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION,
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 654 I.

JULY.

Funds

Certain transfer of — sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From Captain C. C. RAWSON, R.E., Executive Engineer, Godávari Eastern Division, to the Superintending Engineer, I Circle, dated Dowlaishweram, 16th April 1885, No. 33.

I have the honor to request that you will be good enough to obtain sanction of Government for the following works, under Productive Public Works, Capital Account, which have exceeded their estimates.

2. The completion certificates for these works have been despatched to the Examiner of Public Works Accounts, Madras, explaining the cause of excess thereon—

Name of Work.	Estimates.	Expenditure.			Excess.		
	RS.	RS.	A.	P.	RS.	A.	P.
Quarters for lock establishment at Alamúr lock, Coringa canal	1,220	1,229	15	9	9	15	9
Quarters for lock establishment at Choppella, Bank canal, Eastern division	860	873	15	5	13	15	5
Quarters for lock establishment at Kapilaishwaram ...	860	881	5	0	21	5	0
Do. do. do. at Kulla	860	862	15	0	2	15	0
Total ...	...	...			48	3	2

Endorsement on the above.

No. 181 G.D.

Copy submitted to the Chief Engineer for Irrigation, who will be so good as to obtain orders of Government authorising the Examiner to admit the excess outlay on the works named in the foregoing letter. The excess is very small and can be charged to the lump sum still available for unforeseen works. The orders contained in paragraph 3 of G.O., No. 337 I., of the 30th March 1885, will be attended to in the submission of future estimates.

DOWLAISHWERAM, 24th April 1885.

(Signed) W. A. MATHEWS, Assistant Engineer, *for* Superintending Engineer, I Circle.

To the Superintending Engineer, I Circle, dated 4th May 1885, No. I/34 G.D.
From " " I " " 9th July " " 746 G.D.

ORDER—dated 28th July 1885, No. 655 I., Public Works.

The Examiner of Public Works Accounts is authorised to pass the excess expenditure incurred on the works enumerated in paragraph 2 of the letter from the Executive Engineer, Godávari Eastern division. Rs. 48 required to meet the excess expenditure will be transferred from the amount available at present for unforeseen works of the Godávari delta system, which will then be reduced to Rs. 4,000.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch

To the Superintending Engineer, I Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.

Govt. of (1885) Madras

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 655 I.

JULY.

Excess Expenditure

The Examiner, Public Works Accounts, authorised to pass the — on certain works in the Godávari Eastern division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following letter from Lieutenant-Colonel J. PENNYCUICK, R.E., Superintendent of Works, Tank Maintenance Scheme, to the Chief Engineer for Irrigation, dated Chepâk, 17th July 1885, No. 1709 T. :—

I have the honor to submit, for sanction, a revised estimate, in duplicate, amounting to Rs. 2,780, in lieu of that sanctioned in G.O., No. 993 I., dated 6th November 1884, for Rs. 2,512.

2. The original estimate provided for eleven third-class mathematical instrument boxes, but as there were no third-class boxes available in the Public Works Stores, three first-class and eight second-class boxes were supplied instead, and were accepted as they were urgently required.

3. The sanction of Government is therefore solicited to the revised estimate herewith submitted.

Order—dated 28th July 1885, No. 656 I., Public Works.

The revised estimate, amounting to Rs. 2,780, for scientific instruments required for No. 1 Tank division, is sanctioned, as shown below, in supersession of the estimate of Rs. 2,512 sanctioned in G.O., No. 993 I., dated 6th November 1884 :—

H. Public Works not classed as Productive.
44. Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.
Tools and Plant.
New Supplies.
Scientific instruments, Estimate ... ... Rs. 2,780

2. This sanction has been registered as No. 92 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintendent of Works, Tank Maintenance Scheme, with enclosure.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts, with duplicate abstract estimate.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 656 I.

JULY.

Scientific Instruments

Revised estimate for —, required for No. 1 Tank division, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Establishment.

READ—the following letter from J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Buchireddipalle, 3rd July 1885, No. 327 S.G.:—

I have the honor, with reference to G.O., No. 420 I., of the 4th May, to forward an estimate, amounting to Rs. 8,300, prepared by the Collector of Nellore, of the cost of the total establishment employed for the acquisition of land for the Sangam project.

2. The pay of measuring officers applied for in my No. 223 S.G., of the 2nd ultimo, has been included.

3. I also forward a copy of Collector's letter sending on this estimate to me.

4. Mr. Grose considers that it is possible that the special deputy collector and his establishment may be required after the end of September. I have consulted the Executive Engineer, Sangam Project division, on this subject, and he informs me that he can guarantee to have all the schedules for land for the Kanigiri reservoir in before the 15th August. The schedules are now being sent in as fast as they are got ready. I think this ought to enable the deputy collector to complete the settlement and to prepare all bills before the 30th September, when sanction for his employment ceases. It probably will not be possible to pay off all the men entitled to receive compensation, but I trust it will not be necessary to keep on special establishment for this purpose, but that payments can be made by the ordinary revenue establishment.

5. The cost of this establishment as a debit against the cost of land was not foreseen when the project estimate was prepared. It was, I think, anticipated that the land will be acquired by the ordinary revenue establishment.

ORDER—dated 28th July 1885, No. 657 I., Public Works.

The estimate, amounting to Rs. 8,300, of the cost of the establishment employed in acquiring lands required for the Sangam anicut project, is sanctioned from the balance of the lump sum provision in the Sangam project estimates for unforeseen works, which will then be reduced to Rs. 15,150.

2. This sanction has been registered as No. 93 I. of 1885-86, and classified as shown below:—

N. Capital expenditure on Irrigation Works not charged against Revenue.
51. Irrigation and Navigation.
Sangam Anicut Project.
I. Works.
(1) Head Works.
B. Land.
Cost of temporary establishment, Estimate ... ... Rs. 8,300

3. The Superintending Engineer, II Circle, will submit an application for supplemental sanction, should the Collector consider that the work which may remain to be done after the 30th September next cannot be attended to by the ordinary revenue establishment.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ESTABLISHMENT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 657 I.

JULY.

Lands

Estimate of cost of establishment employed in acquiring — for the Sangam anicut project, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 9th July 1885, No. 745 G.D. :—

I have the honor to submit, herewith, for sanction, an estimate of Rs. 745 for constructing Kovvada channel sluice, Undi canal, Godávari Western division.

2. The amount provided for the work in the delta project estimates is Rs. 800, and the saving effected by the present estimate will be reserved for transfer to other works of the project on which there may be an excess.

ORDER—dated 28th July 1885, No. 658 I., Public Works.

The following estimate, amounting to Rs. 745, for constructing the Kovvada channel sluice, Undi canal, Godávari Western division, is sanctioned in supersession of the provision of Rs. 800 made for the work in the estimates printed in proceedings, Madras Government, No. 259 I., dated 21st March 1882, the saving of Rs. 55 effected by the present estimate being added to the amount at present available for unforeseen works of the Godávari delta system, which will then be increased to Rs. 4,055 :—

N. Capital Expenditure on Irrigation Works not charged against Revenue.
51. Irrigation and Navigation.
Godávari Delta System.
Western Section.
I. Works.
(3) Distributaries.
Undi Canal.
C. Works.

Constructing Kovvada sluice, Estimate ... ... Rs. 745

2. This sanction has been registered as No. 94 I. of 1885-86.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle, with three enclosures.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 658 I.

JULY.

Kovvada Channel Sluice, Undi Canal, Godavari Western Division

Estimate for —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From Lieut.-Colonel H. R. MEAD, R.E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 8th June 1885, No. 387 T.J.

With reference to your No. 972 C., dated 29th May 1885, calling on me to report with reference to paragraph 2 of G.O., No. 184 L.F., Financial, dated 19th May, I have the honor to point out that, as there is no copy of the proceedings of the Local fund board and the President's letter regarding the loss caused to the Local fund board by the breaching of the Vennár bank, I am unable to know on what grounds they base their claim for compensation.

2. I can only report that in August 1884 a breach occurred in consequence of the failure of a sluice in the north bank of the Vennár, just above the regulators near Nídamangalam, and the water from it breached the road from Nídamangalam to Kumbakónam. The President of the Local fund board (the late Mr. Hebbert) addressed the Executive Engineer on the subject, and, on the matter being referred to me, I requested the President, if he considered the Local fund board had any claim on Government, to make the claim through the proper channel.

3. My opinion on the matter is that the Local fund board has no claim whatever on Government for compensation. The case is to me exactly similar to a claim made by the Local fund board of Tinnevelly in 1881, which was disposed of in G.O., No. 916 I., dated 11th November 1882.

From Lieut.-Colonel H. R. MEAD, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Ramnad, 26th June 1885, No. 501 T.J.

With reference to your memorandum, No. VI/34 T.J., dated 20th June 1885, I have the honor to acknowledge the receipt of proceedings of the Board of Revenue, No. 4380, dated 20th December 1884, and to report that I have but little to add to my former report on the subject, No. 387 T.J., dated 8th June 1885.

2. During floods and rain in Tanjore and other districts, breaches in river banks and other irrigation works constantly occur; and this has always been the case, and, in my opinion, must be so, and this especially in Tanjore district where we know the rivers have not capacity to carry off the flood waters. Mr. Pennington is, I consider, mistaken in his remark that a breach took place in the same place in 1882; the fact of the sluice, the failure of which caused the damage in 1884, not being destroyed in 1882 shows the breach was not in that portion of the bank. It is true that the road in 1884 was breached in the same or almost the same places as in 1882, but this is the result of the road crossing the natural drainage down which the water from any breach in the Vennár north bank must pass.

3. In paragraph 2 of his letter, No. 1802, dated 12th December, forwarding the Local fund board's proceedings, he states that he "doubts if it is possible to prevent the rivers in Tanjore from breaching somewhere on the occurrence of high floods," and I can only add that I agree with him; at the same time Tanjore, except in exceptionally high floods, &c., does not suffer so much from the rivers breaching as it did in former years, and this is owing to the improved state of the banks. I may state, however, that it is not proposed to make the banks higher than they are now, except in special places, as doing so would be useless; it would increase the damage in high floods to the delta; it is far better that the many breaches, which must occur, should occur in the upper parts of the main rivers rather than the flood waters should be

carried into the minor small rivers in the lower parts of the delta. The damage by the floods of December 1884 was, I consider, much increased by the fact of the Vennár north bank, west of the Vennár regulators near Nídamangalam, not breaching as it has generally, I may say always, done during similar floods.

4. With regard to the claim for compensation made by the Local fund board, I can only again refer to G.O., No. 916 I., dated 11th November 1882, in which a similar claim was disposed of, and I would call particular attention to paragraphs 3 and 4 of my note, No. 566 T.N., dated 30th October 1882, printed with that Government order.

No. 135 I.

Note by the Chief Engineer for Irrigation.

The Superintending Engineer shows that the Collector was mistaken in supposing that the breach in the Vennár bank in the floods of last year occurred in the same place as the breach of 1882, and there is therefore no ground for the assertion made in paragraph 2 of endorsement of the President, Local fund board, Tanjore, No. 1429, dated 15th September 1884.

2. The undersigned agrees generally with the views expressed by the Superintending Engineer in his letter above quoted. The main point, however, now to be noticed is, that in abnormal floods the rivers in Tanjore are unable to carry the volume of flood water, and that when such a flood has occurred the banks have invariably breached; but that of late years much has been done to strengthen the banks, and the breaches are not as numerous as they used to be, under similar circumstances, some years ago. Since, therefore, the Local fund boards have taken over the roads, the liability to damage to which they were always exposed has been reduced, and unless there is clear evidence that there has been neglect of ordinary precaution to prevent damage, the board can have no claim against the Government.

3. It is submitted that the interests of the Government and the Local fund boards being identical, it is the duty of the board to call the attention of officers of this department to any danger which may be apprehended to their works in consequence of defects in river banks, &c., and that the public interests are not likely to be benefited by the spirit in which claims on the Government have been, in this case, and previously, brought forward.

Ootacamund,
9th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 28th July 1885, No. 659 I., Public Works.

Communicated to the Financial Department, with reference to paragraph 2 of order in that department, No. 184 L.F., dated 19th May 1885.

2. The Government do not see any ground on which they can be held liable for the damage done to the roads in the Tanjore district by the breach in the Vennár bank.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, VI Circle.
„ Chief Engineer for Irrigation.
„ Financial Department.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

G.O., 28th July 1885, No. 659 I.

JULY.

Roads in the Tanjore District

Orders stating that Government cannot be held liable for the damage done to the — by the breach in the Vennár bank.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. E. PAUL, Esq., Executive Engineer, Godávari Western division, to the Superintending Engineer, I Circle, dated Godávari, 2nd July 1885, No. 127 :—

I have the honor to bring to your notice that the current year's budget grant for this division for tools and plant, Productive Public Works, Revenue Account, is Rs. 1,500, while the outlay up to 31st May 1885 is Rs. 3,432 on account of four first-class and eight second-class ferry boats, to replace old ones; besides this, there are four ferry boats now lying at Dowlaishweram, the repairs of which I have counter-ordered until funds are available.

2. The building of the abovementioned boats was carried out much quicker than I anticipated; they were badly required, and I concluded that there would be time to obtain further funds before they were fairly put in hand in the workshops.

3. In my first application, which was forwarded too late to be included in the return for the Circle, I applied for Rs. 3,000 under this head.

4. The Examiner has now requested me, in his audit note for April 1885, to apply at once for further funds, and I request that Rs. 3,000 may be either obtained from the reserve at the disposal of Government, or, failing this, that it may be transferred from the Rs. 75,000 allotted to this division for Productive Public Works, Revenue Account, Maintenance and Repairs.

Endorsement on the above.

No. 823 G.D.

Copy submitted to the Chief Engineer for Irrigation, with the request that, if the additional allotment required under Tools and Plant cannot be granted, the transfer proposed may be sanctioned in dealing with the first application of modifications of allotments of this circle, forwarded with this office letter, No. 74 G.L., of 23rd May 1885.

DOWLAISHWERAM, 17th July 1885. (Signed) W. A. MATHEWS, Assistant Engineer, *for* Superintending Engineer, I Circle.

ORDER—dated 29th July 1885, No. 662 I., Public Works.

The following transfer of funds is sanctioned :—

G. Productive Public Works.
Revenue Account.
38. Irrigation and Navigation.
Godávari Delta.

From	RS.	*To*	RS.
Godávari Western division—		Godávari Western division—	
Maintenance and Repairs	2,439	Tools and Plant	3,000
Establishment	561		
Total ...	3,000	Total ...	3,000

2. The Superintending Engineer, I Circle, will draw the attention of the Executive Engineer of the Godávari Western division to paragraph 1514 of the Public Works Code, which prohibits expenditure being incurred in anticipation of allotment, except in cases of real emergency.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.WD.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated July, 29th.

Recd. *Encl.*

G.O., 29th July 1885, No. 662 I.

JULY.

Funds

Certain transfer of —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 15th July 1885, No. 785 G.D. :—

I have the honor to request you will be good enough to obtain the sanction of Government to the excess outlay incurred on the marginally noted works under Productive Public Works, Capital Account, in the Godávari Eastern and Central divisions.

—	Estimate.	Outlay.	Excess.
	RS.	RS. A. P.	RS. A. P.
Godávari Eastern Division.			
Regulating bridge at head of Nadurubada channel No. 1, Mundapett canal	670	716 2 0	46 2 0
Sluice to Someswaram branch of Thapeswaram north side channel	330	367 6 4	37 6 4
Head-sluice to No. 1 side channel, right bank, 8 miles 65 chains, Mundapett canal	750	755 12 0	5 12 0
Godávari Central Division.			
Lock establishment quarters at Boberlanka lock ..	1,220	1,242 14 11	22 14 11
Total ..	..	..	112 3 3

2. The cause of excess outlay on each work has been explained in the accompanying completion reports, to be returned.

3. The excess under reference will be met from the saving reported in my letter No. 746 G.D., dated 9th July 1885, as available for unforeseen works.

ORDER—dated 29th July 1885, No. 663 I., Public Works.

The Examiner of Public Works Accounts is authorised to accept the completion reports for the works referred to in the foregoing letter, the excess expenditure of Rs. 112 incurred on them being met from the balance of the amount available for unforeseen works of the Godávari delta system, which will then be reduced to Rs. 3,943.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, V Circle, with four enclosures.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1885} Madras
PUBLIC WORKS.

Dated July, 29th.

Recd. *Encl.*

G.O., 29th July 1885, No. 663 I.

JULY.

Completion Reports

The Examiner, Public Works Accounts, authorised to accept the — for certain works in the Godávari district.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following letter from J. W. RUNDALL, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Buckingham Canal, 13th July 1885, No. 352 N.L. :—

I have the honor to bring to your notice that the Executive Engineer, Nellore division, reports that, prior to the receipt of orders restricting expenditure, he had made arrangements for spending Rs. 13,000 on minor original sanctioned works of his division. The original grant was Rs. 10,000, reduced to Rs. 8,000 in the final issue of the budget.

2. Captain Henderson now asks for an increased grant of Rs. 5,000, which I trust you will give, if it is possible.

3. I find that arrangements for carting materials were made in March to admit of work being started early in April, and that considerable progress had been made before the reduction of allotments was known. Captain Henderson hoped by rapid progress early in the year to get further grants, and the restrictive orders found him with work done in advance of the grants.

ORDER—dated 29th July 1885, No. 664 I., Public Works.

The following appropriation is made from the balance of the amount transferred in G.O., No. 3413, Revenue, dated 4th July 1885, from the grant for "Minor" irrigation works to that for "Imperial" works :—

Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.
Minor Original Works.

	RS.
Nellore division	5,000
Establishment	1,150
Tools and plant	50
Total ...	6,200

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
„ Chief Engineer for Irrigation.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of 1885 Madras.

PUBLIC WORKS.

Dated July, 29th.

Recd. *Encl.*

G.O., 29th July 1885, No. 664 I.

JULY.

Funds

Certain appropriation of — made for works in the Nellore division.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following letter from the Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 10th July 1885, No. 762 G.D. :—

I have the honor to submit, herewith, the usual statements of approximate areas irrigated by the Godávari canals in fasli 1294 (1884-85).

2. It will be observed from these statements that in the three deltas of the Godávari district there is only a slight increase of 373 acres over the area irrigated last year (1883-84).

3. In the Eastern division there is a decrease of 8,818 acres, and the division officer does not give any explanation for this decrease except for 224 acres under the Coringa canal.* He will be called upon to furnish an explanation as to the causes for the above decrease.

* *Vide* remark in the statement.

4. The increase of cultivation in the Central division has been under the Amalápuram canal and the increase in the Western division has been under several canals (*vide* statement).

Enclosure.

Statement showing approximate areas of lands irrigated by the canals of the Godávari delta in fasli 1294 (1884-85) and the similar areas for the preceeding year as shown by the Irrigation Department registers.

First Crop.

No.	Names of Canals.	Areas, Fasli 1293 (1883-84).		Areas, Fasli 1294 (1884-85).		Remarks.
		Wet crop irrigated.	Dry crop watered.	Wet crop irrigated.	Dry crop watered.	
		RS.	RS.	RS.	RS.	
	Eastern Delta.					
1	Main canal	60	..	157	..	
2	Bank do.	6,643	7,763	7,031	14	
3	Cocanada canal	38,147	354	39,450	34	
4	Sámalkót do.	26,978	..	27,242	..	
5	Mundapetta do.	25,001	2,828	26,313	204	
6	Coringa do.	*28,907	1,158	*28,683	16	* The division officer says that the decrease of 224 acres below the area of last year is due to the land being barren and left uncultivated.
7	Injeram do.	11,891	675	12,450	2	
8	Drains	179	..	170	..	
	Total, Eastern delta	1,37,806	12,778	1,41,496	270	
	Central Delta.					
1	Main canal	..	73	..	..	
2	Gunnaram canal	34,674	1,161	35,310	48	
3	Bank do.	22,708	1,171	23,466	54	
4	Amalápuram do.	25,010	1,096	29,095	..	
5	Billakurru do.	..	..	..	..	
6	Bendamurlanka canal	9,158	9	8,957	..	
7	Drains	751	..	751	..	
	Total, Central section	92,301	3,510	97,579	102	

Statement showing approximate areas of lands irrigated by the canals of the Godávari, &c.—*cont.*

No.	Names of Canals.	Areas, Fasli 1293 (1883-84).		Areas, Fasli 1294 (1884-85).		Remarks.
		Wet crop irrigated.	Dry crop watered.	Wet crop irrigated.	Dry crop watered.	
		RS.	RS.	RS.	RS.	
	WESTERN DELTA.					
1	Main canal	399	342	605	44	
2	Kakaraparru canal	6,749	1,088	7,462	205	
3	Gostanaddi and Velpúr canal ..	33,405	273	33,210	158	
4	Bank canal	21,982	584	26,067	237	
5	Mukkamala canal	1,936	57	..	..	The area irrigated under Mukkamala canal is shown under Bank canal. See Irrigation Chief Engineer's memorandum, No. I/112 G.D., of 4th December 1884.
6	Narsápur do.	58,749	330	60,594	176	
7	Ellore do.	29,524	113	30,582	84	
8	Attili do.	24,516	2,187	27,252	200	
9	Junction do.	14,193	127	14,965	21	
10	Venkiah and Weyeru canal ..	32,880	224	32,428	19	
11	Undi canal	37,287	196	40,002	..	
	Drainages.					
1	Nakkala	..	..	41	6	
2	Kaza	29	..	..	..	
3	Mogultur	..	..	..	..	
4	Gostanaddi	24	..	..	..	
5	Yenamadurru	..	..	187	..	
6	Gonter	30	..	..	..	
	Total, Western section ..	2,61,703	5,521	2,73,395	1,150	
	Grand Total ..	4,91,810	21,809	5,12,476	1,522	

—

ABSTRACT.—Approximate areas as given by Public Works Department.

No.	Section of Delta.	Description.	Fasli 1294 (1884-85).	Fasli 1293 (1883-84).	Fasli 1292 (1882-83).	Fasli 1291 (1881-82).	Fasli 1290 (1880-81).
			ACS.	ACS.	ACS.	ACS.	ACS.
1	Eastern section ..	Wet crop, (1st) irrigated ..	141,496	137,806	137,679	134,511	143,614
		Dry do. watered ..	270	12,778	12,272	613	3,993
2	Central do. ..	Wet do. (1st) irrrgated ..	97,579	92,301	89,784	90,757	92,426
		Dry do. watered ..	102	3,510	2,727	2,385	1,462
3	Western do. ..	Wet do. (1st) irrigated ..	273,395	261,703	265,130	271,349	282,981
		Dry do. watered ..	1,150	5,521	9,131	5,727	2,379
		Total ..	513,992	513,619	516,723	505,342	526,855

DOWLAISHWERAM,
10th July 1885.

(Signed) W. A. MATHEWS, Assistant Engineer,
for Superintending Engineer, I Circle.

——

No. 139 I.

Submitted to Government.

2. There is a total increase under wet crops in the three sections of the Godávari delta of 20,660 acres over last year, whereas the dry crops watered show a decrease of 20,287 acres, probably due to seasonable falls of rain though the total fall of rain in 1884-85 was less than in the previous year.

OOTACAMUND,
24th July 1885.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer for Irrigation

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 30th July 1885, No. 667 I., Public Works.

Recorded.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 30th.

Recd. *Encl.*

G.O., 30th July 1885, No. 667 I.

JULY.

Godavari Canals

Statements of approximate areas irrigated by the — in 1884-85, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following letter from J. W. Rundall, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Sangam, 7th July 1885, No. 335 S.G. :—

I have the honor to bring to your notice that Mr. Malet, Executive Engineer, has had photos, similar to those referred to in G.O., No. 597 I., of the 31st July 1883, taken of the following works :—

1. Head and under sluices.
2. Rear view of head-sluices.
3. Do. of under-sluices.
4. Drop in 4th mile, Main canal.
5. Bridge over Main canal.
6. Southern channel head-sluice.
7. Eastern head-sluice.
8. View of anicut from under-sluices.
9. View of anicut from centre of river with head-sluice in distance.

2. Will you please let me know whether Government are willing to take three copies of these on the same terms as before.

3. As Nos. 1 to 7 are of completed works, you might wish to send copies to the Government of India. Both views of the anicut are valuable in illustrating the method of construction.

4. I would, as before, request permission to charge to head works, under O. Miscellaneous, the cost of the photos required.

No. 141 I.

Submitted to Government with a recommendation that four copies of each of the photographs Nos. 1 to 7 and three copies of each of Nos. 8 and 9 be purchased, and that they be distributed as follows :—

Government of India, one copy Nos. 1 to 7.
Chief Engineer for Irrigation, one copy Nos. 1 to 9.
Superintending Engineer, II Circle, one copy Nos. 1 to 9.
Executive Engineer, Sangam division, one copy Nos. 1 to 9.

2. The cost of the photographs may be met as suggested by the Superintending Engineer.

Ootacamund, (Signed) J. O. Hasted, Colonel, R.E.,
23rd July 1885. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 31st July 1885, No. 670 I., Public Works.

The proposals of the Chief Engineer for Irrigation are approved.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Superintending Engineer, II Circle.
,, Chief Engineer for Irrigation.
,, Examiner, Public Works Accounts.

IRRIGATION.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated July, 31st.

Recd. *Encl.*

G.O., 31st July 1885, No. 670 I.

JULY.

Sangam Project Works

Purchase of copies of photographs of —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF JULY 1885.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Buckingham canal.—Orders on petition from certain ryots regarding diversion of the southern section of the —.	1st July 1885, No. 574 I.	......
Temporary establishment for measuring irrigated lands in zemindaries.—Proceedings, in the Revenue Department, sanctioning retention of the — for another month, recorded.	7th do. do. No. 583 I.	......
Survey of zemindari and inam lands in the Godávari and Kistna deltas.—Proceedings, in the Revenue Department, deciding that the cost of —, for the purpose of water-rate, should be borne by Government, communicated to the Chief Engineer for Irrigation.	7th do. do. No. 584 I.	.....
Estate works.—Proceedings, in the Revenue Department, directing modification of Board's standing order No. 189, so as to bring works executed by the Public Works Department for estates under the Court of Wards within the purview of the Public Works Department Code, communicated to the Superintending Engineer, VI Circle.	7th do. do. No. 585 I.	......
Minor irrigation works in the Nellore district.—Proceedings, in the Revenue Department, sanctioning entertainment of the establishment required for preparation of plans and estimates for works in connection with —, communicated to the Superintending Engineer.	7th do. do. No. 586 I.	......
Reserve stock in the Godávari Eastern division.—Superintending Engineer to report on the feasibility of reducing the limit of —, after the lapse of the current year.	7th do. do. No. 587 I.	3rd July 1884, No. 623 I. 3rd Feb. 1883, No. 107 I.
Survey of the Nilambúr river.—Proceedings, in the Revenue Department, referring proposal of the Conservator of Forests for a —, communicated to the Superintending Engineer for report.	7th do. do. No. 588 I.	......
Minor irrigation works.—Proceedings, in the Revenue Department, reviewing statement showing expenditure on — up to end of March 1885, communicated to the Chief Engineer for Irrigation.	7th do. do. No. 589 I.	......
Bezváda quarries.—Report of an accident at the —.	7th do. do. No. 590 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Repair of damages to irrigation works in the South Arcot district.—Superintending Engineer to report the funds required for the —.	8th July 1885, No. 591 I.	5th Feb. 1885, No. 110 I. 20th Dec. 1884, No. 1152 I. 19th Feb. 1885 No. 403 W.
Puthucadu channel, Coimbatore district.—The Superintending Engineer to arrange for the transfer of the — to the Revenue Department as a minor irrigation work.	8th do. do. No. 596 I.	......
Minor irrigation works.—Proceedings of the Board of Revenue, circulating forms and instructions regarding maintenance of accounts of expenditure on —, communicated to the officers concerned.	13th do. do. No. 601 I.	......
Statement of objectionable items in the accounts of the I Circle for March 1885.—Orders on —.	15th do. do. No. 603 I.	......
Statement of objectionable items in the accounts of the Tank Maintenance Scheme for March 1885.—Orders on —.	15th do do. No. 604 I.	......
Statement of objectionable items in the accounts of the V Circle for March 1885.—Orders on —.	15th do. do. No. 605 I.	......
Statement of objectionable items in the accounts of the VI Circle for April 1885.—Orders on —.	15th do. do. No. 606 I.	29th June 1885, No. 564 I.
Statement of objectionable items in the accounts of the IV Circle for April 1885.—Orders on —.	15th do. do. No. 607 I.	29th June 1885, No. 565 I.
Minor irrigation works.—Proceedings, in the Revenue Department, recording Board's review of reports on — for April 1885, recorded.	18th do. do. No. 611 I.	......
Agra canal atlas.—Copies of — distributed.	18th do. do. No. 612 I.	......
Red Hills tank.—Proceedings, in the Revenue Department, passing orders on claims to compensation for loss occasioned by breaching of the —, communicated to the Superintending Engineer.	18th do. do. No. 613 I.	27th Mar. 1885, No. 323 I. 12th Mar. 1885, No. 263 I. 5th Mar. 1885, No. 229 I. 12th Feb. 1885, No. 154 I. 12th Dec. 1884, No. 1122 I. 12th Dec. 1884, No. 1114 I.
Statement of objectionable items in the accounts of the II Circle for April 1885.—Orders on —.	18th do. do. No. 614 I.	29th June 1885, No. 567 I.
Revenue report of irrigation works in Rajputana for 1883-84.—Orders of the Government of India reviewing —, communicated to the officers concerned.	18th do. do. No. 622 I.	29th Jan. 1884, No. 99 I.
Statement of objectionable items in the accounts of the I Circle for April 1885.—Orders on —.	20th do. do. No. 630 I.	30th June 1885, No. 572 I.
Statement of objectionable items in the accounts of the V Circle for April 1885.—Orders on —.	20th do. do. No. 633 I.	29th June 1885, No. 566 I.
Statement of objectionable items in the accounts of the III Circle for April 1885.—Orders on —.	20th do. do. No. 634 I.	30th June 1885, No. 571 I.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Vedarniem canal.—Orders on proceedings, in the Revenue Department, in regard to the adjustment of expenditure on — incurred by the Salt Department.	21st July 1885. No. 635 I.	22nd April 1885, No. 389 I. 8th June 1885, No. 1327 W. 11th Oct. 1884, No. 914 I. 1st Oct. 1884, No. 883 I. 1st Sept. 1884, No. 787 I.
Pálár anicut system.—Letter from the Government of India returning plans of the —, communicated to the Chief Engineer for Irrigation.	24th do. do. No. 644 I.	18th May 1885, No. 934 C. 13th June 1884, No. 562 I.
West Coast canal.—Classification of —.	24th do. do. No. 645 I.	2nd July 1885, No. 1540 W. 6th May 1885, No. 429 I.
Plans connected with the Cauvery delta.—Correspondence regarding certain —, recorded.	24th do. do. No. 646 I.	13th Feb. 1885, No. 162 I. 1st July 1882, Nos. 498-99 I. 9th June 1881, No. 363 I. 6th Aug. 1869, No. 2585 I.
Appropriation return for May 1885.—Orders on —.	27th do. do. No. 652 I.	22nd June 1885, No. 547 I.
Copy to Accountant-General, Public Works Department.	27th do. do. No. 653 I.	.....
Progress Report of productive irrigation works for 1884-85.—Letter from the Government of India inquiring when the — will be submitted and stating the number of copies required, recorded.	28th do. do. No. 660 I.	18th July 1885, No. 619 I.
Minor irrigation works.—Proceedings of the Board of Revenue reviewing statements showing expenditure on — during May 1885, recorded.	29th do. do. No. 661 I.	......
Erratum in G.O., No. 599 I., dated 11th July 1885, regarding distribution of grant for the Godávari delta.	29th do. do. No. 665 I.	......
Suit.—Report of result of — against a contractor in the Nellore district for recovery of overpayment made to him, recorded.	29th do. do. No. 666 I.	......
Public works in the Godávari district.—Proceedings of the Board of Revenue on Collector's report on —, for 1884-85, recorded.	30th do. do. No. 668 I.	......
Revenue report of irrigation works in Sind for 1883-84.—Orders of the Government of India reviewing —, communicated to the Chief Engineer for Irrigation.	30th do. do. No. 669 I.	......